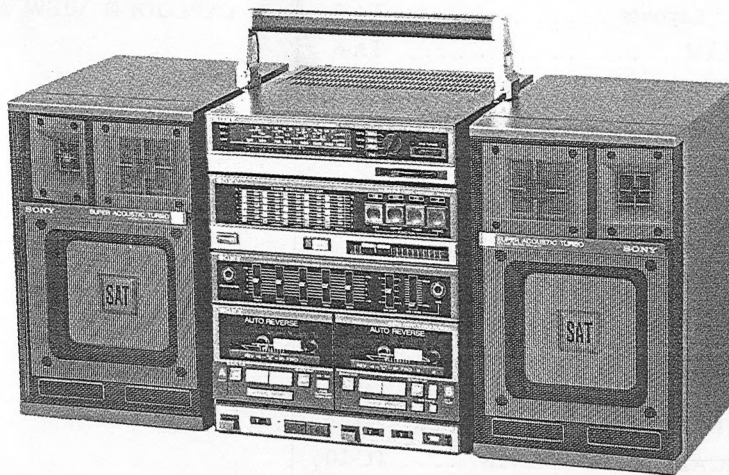


FH-100W

SERVICE MANUAL

E Model



FH-100W consists of ST-137, TA-137, TC-157W and APM-157D.


'Dolby' and the double-D symbol are the trade marks of Dolby laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

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— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



COMPACT HI-DENSITY
COMPONENT SYSTEM
SONY®



4924

TA-137

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TC-157W

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APM-157D

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SPECIFICATIONS

ST-137

System FM stereo, FM/AM superheterodyne tuner
PPL multiplex circuit

FM tuner section

Tuning range 87.5 - 108 MHz
Telescopic antenna
Antenna terminals 75 ohms unbalanced
Intermediate frequency 10.7 MHz
Usable sensitivity $3 \mu\text{V}$ (S/N = 30 dB/75 ohms)
Signal-to-noise ratio 75 dB (mono)
70 dB (stereo)
Harmonic distortion at 1 kHz 0.5% (mono)
1% (stereo)
Separation at 1 kHz 40 dB
Selectivity at 400 kHz 55 dB

SW/MW tuner section

	SW 1	SW 2	MW
Tuning range	3.2 - 7.3 MHz	9.5 - 21.75 MHz	531 - 1,602 kHz
Antenna	Telescopic antenna		Built-in ferrite bar antenna
	External antenna terminal		
Intermediate frequency	450 kHz		
Usable sensitivity	Built-in ferrite bar antenna	—	
	External antenna	25 μV (5 MHz)	30 μV (15 MHz)
		100 μV (999 or 1,000 kHz)	
Signal-to-noise ratio	50 dB (5 mV)		52 dB (50 mV/m)
Harmonic distortion	0.5% (5 mV, 400 Hz)		0.5% (50 mV/m, 400 Hz)

Dimensions Approx. 215 x 55 x 240 mm (w/h/d)
(8 $\frac{1}{2}$ x 2 $\frac{1}{8}$ x 9 $\frac{3}{8}$ inches)
incl. projecting parts and controls
Weight Approx. 0.9 kg (2 lb) net

TA-137

Peak music power output
320 W (6 ohm)

Inputs	Sensitivity	Impedance
PHONO (phono jacks)	2.5 mV	50 kilohms
CD/AUX (phono jacks)	250 mV	50 kilohms
MIC (phone jack)	1 mV	low impedance

Outputs

PRE OUT (phono jacks)	Voltage 250 mV, Impedance 4.7 kilohms
HEADPHONES (stereo phone jack)	Accepts headphones of 8 ohms or more
SPEAKER	Accepts speakers of 6 to 16 ohms

Frequency response

PHONO: RIAA curve ± 0.5 dB
CD/AUX: 40 Hz - 30 kHz ± 0.5 dB
MIC: 100 Hz - 10 kHz ± 0.5 dB

Dimensions Approx. 215 x 115 x 235 mm (w/h/d)
(8 $\frac{1}{2}$ x 4 $\frac{1}{2}$ x 9 $\frac{3}{8}$ inches)
incl. projecting parts and controls

Weight Approx. 4.5 kg (9 lb 15 oz) net

TC-157W
Recording system

4-track 2-channel stereo

Frequency response

DOLBY NR OFF (DIN)
with TYPE IV cassette (Sony METAL-ES)
40 - 15,000 Hz (± 3 dB)
with TYPE II cassette (Sony UCX-S)
40 - 14,000 Hz (± 3 dB)
with TYPE I cassette (Sony HF-S)
40 - 13,000 Hz (± 3 dB)

Wow & flutter 0.08 % WRMS
 ± 0.2 % (DIN)

Dimensions Approx. 220 x 115 x 265 mm (w/h/d)
(8 $\frac{3}{4}$ x 4 $\frac{5}{8}$ x 10 $\frac{1}{2}$ inches)

Weight Approx. 3 kg (6 lb 10 oz) net

APM-157D

Speaker system 3-way speaker system
Speaker units Woofer: 110 cm² APM type
Tweeter: 5cm cone type
Super tweeter: 3.5cm cone type
Enclosure type Bass reflex
Frequency range 60 Hz - 20 kHz
Sensitivity 90 dB/W/m
Impedance 6 ohms
Dimensions Approx. 170 x 280 x 220 mm (w/h/d)
(6 $\frac{5}{8}$ x 10 $\frac{7}{8}$ x 8 $\frac{3}{4}$ inches)
Weight Approx. 3.1 kg (6 lb 14 oz) net per speaker

General

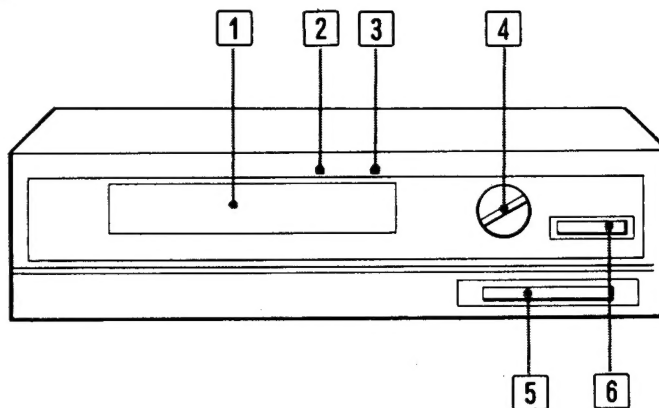
Power requirements 120, 220 or 240 V AC adjustable, 50/60 Hz
Power consumption 90W
Dimensions Approx. 570 x 345 x 265 mm (w/h/d)
(22 $\frac{1}{2}$ x 13 $\frac{5}{8}$ x 10 $\frac{1}{2}$ inches)
incl. projecting parts and controls.
Weight Approx. 15.1 kg (33 lb 5 oz) net
Approx. 17.0 kg (37 lb 8 oz) in shipping carton

Tape Transport Mechanism Type	A Deck: TCM-CMAY A2
	B Deck: TCM-CMAY B3

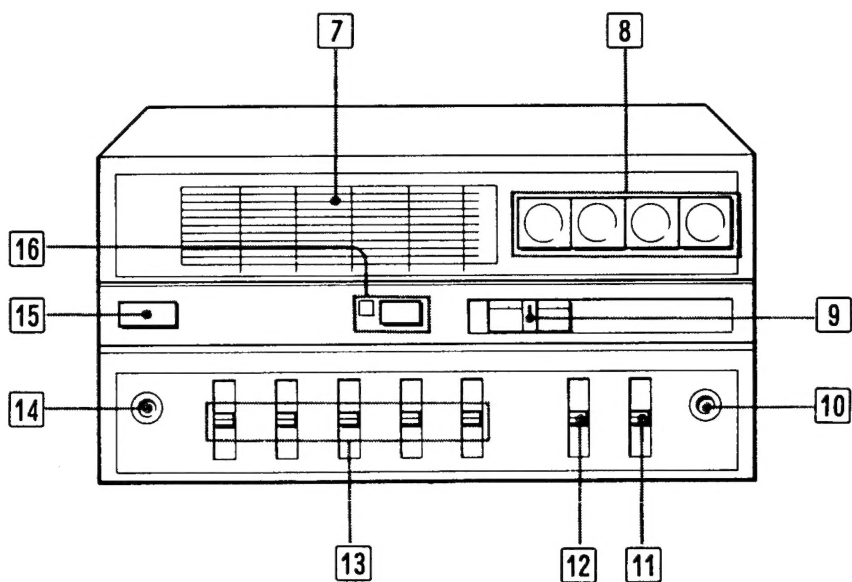
FH-100W

FUNCTION OF CONTROLS

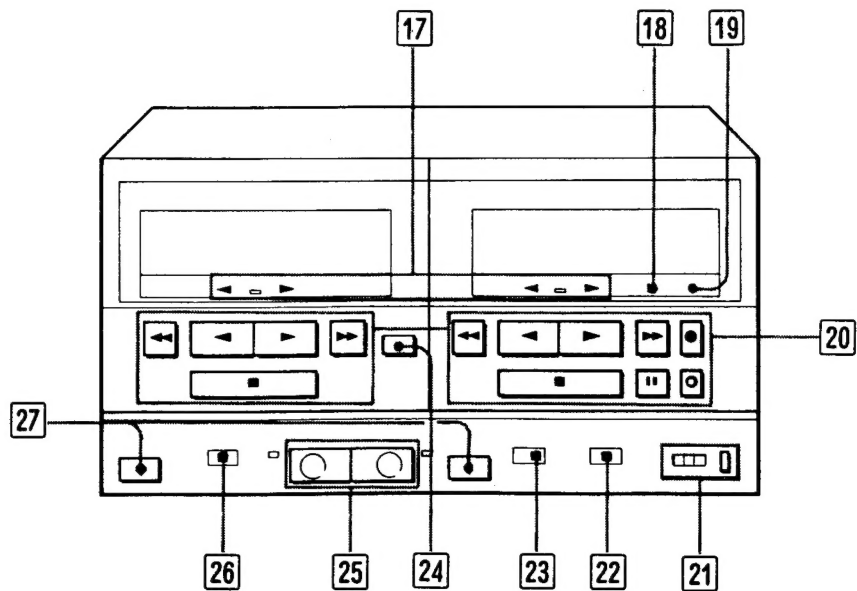
ST-137



TA-137



TC-157W



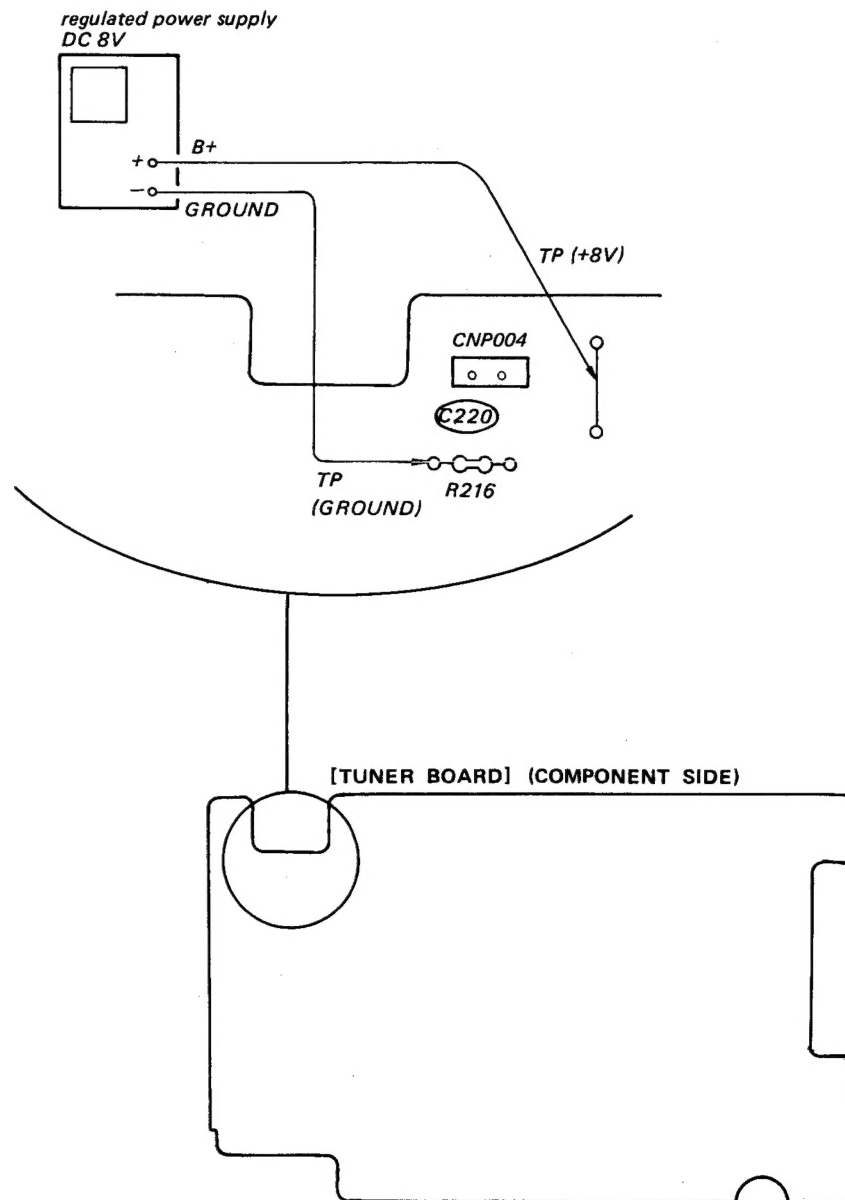
FM STEREO/FM-AM TUNER 〔ST-137〕

REPAIRING PRECAUTION

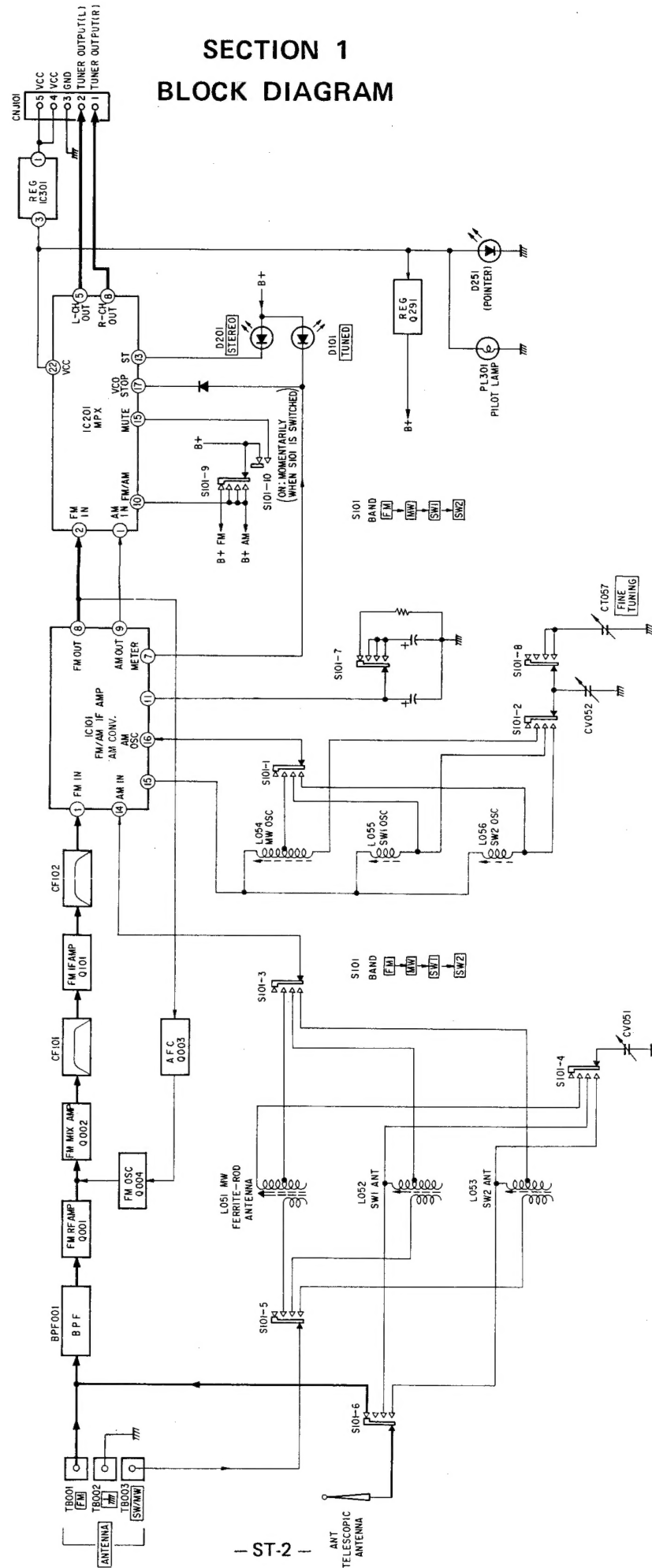
[To apply B+ voltage]

The power of this unit is fed from TA-137.

Because of this, connect the regulated power supply as illustrated below when this unit alone operates.



SECTION 1
BLOCK DIAGRAM



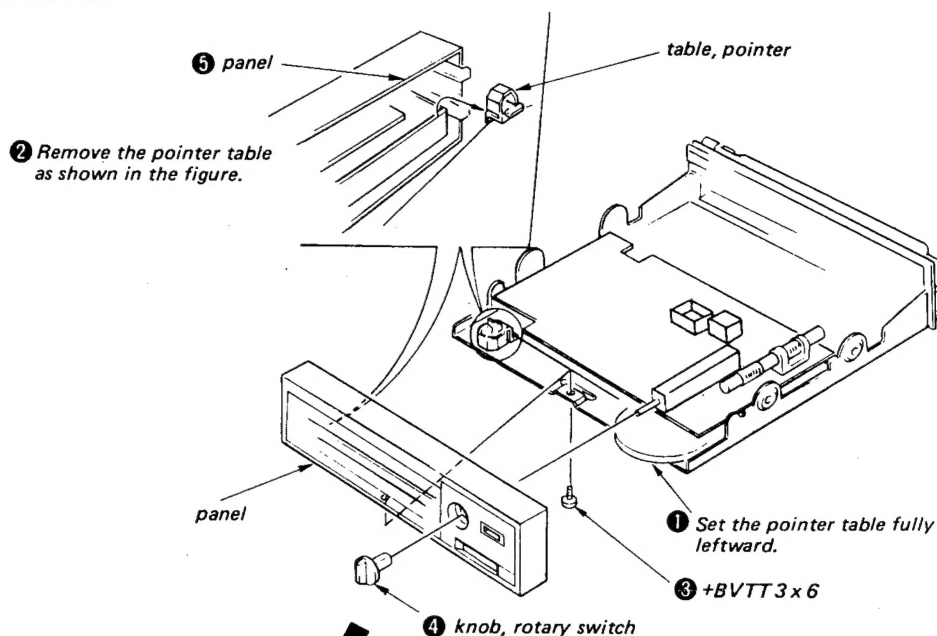
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

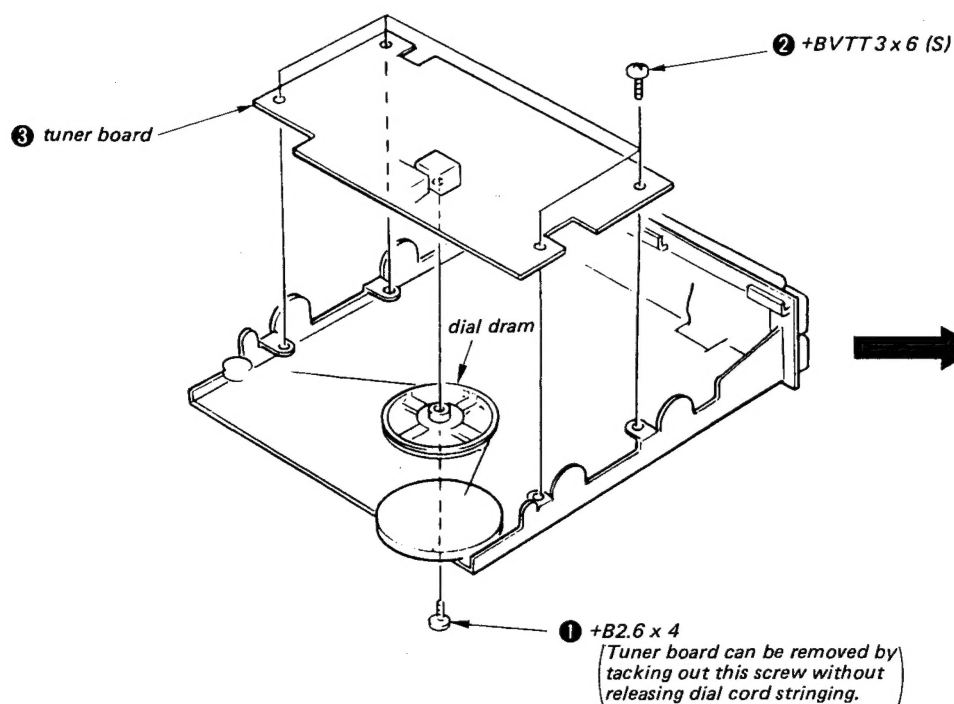
CASE REMOVAL

Remove case by taking out four screws.

PANEL REMOVAL



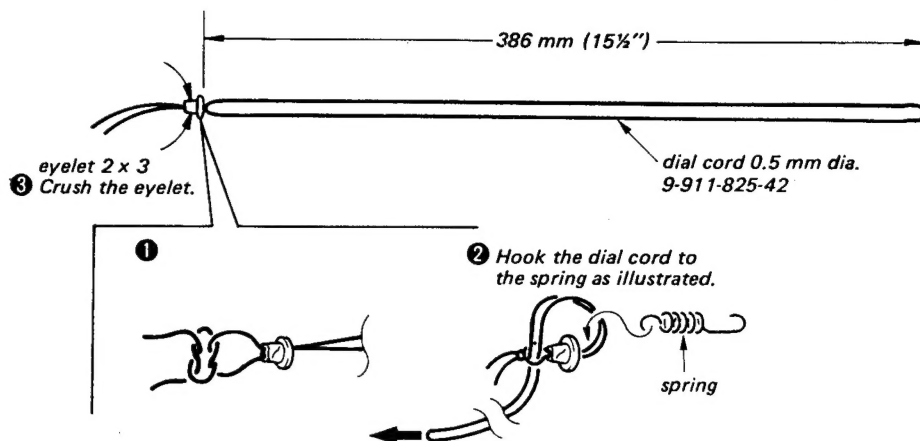
TUNER BOARD REMOVAL



DIAL CORD STRINGING
(See page ST-4)

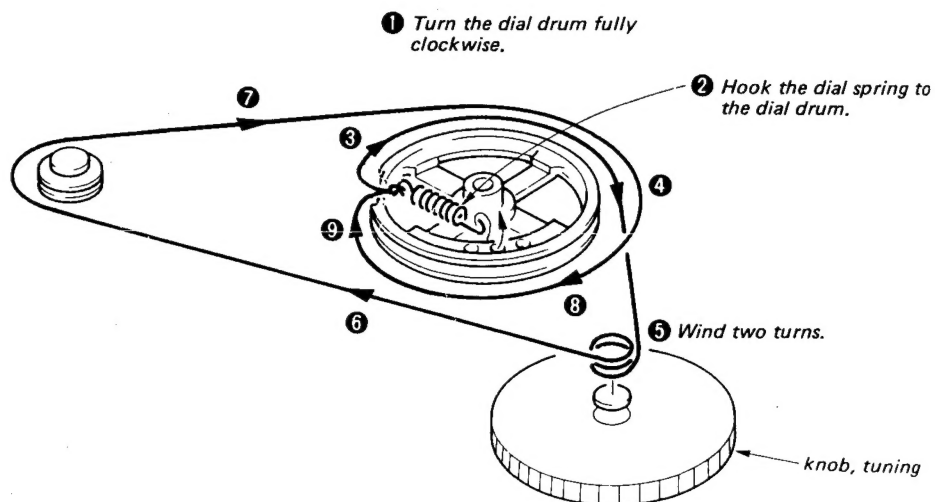
DIAL CORD STRINGING

1) Preparation



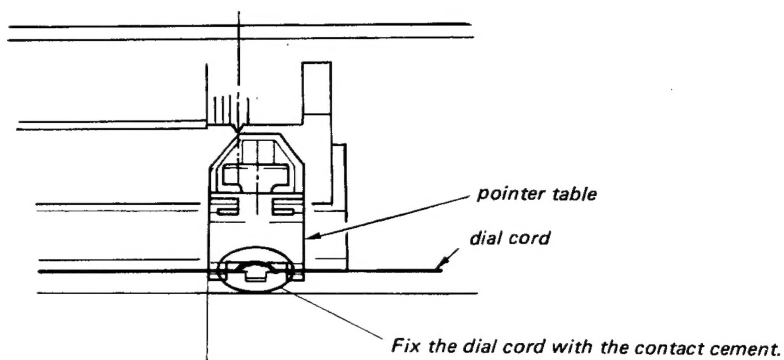
2) Stringing

- String the dial cord in the numerical order given.



3) Pointer Setting

Set the pointer table as shown in the figure.



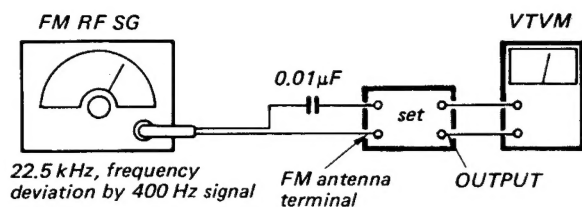
SECTION 3 ADJUSTMENTS

FM

- **Setting:**

Band Switch: FM

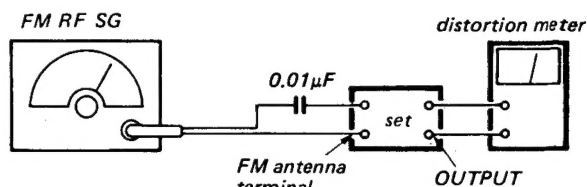
- **Procedure:**



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM Discriminator Adjustment

Setting:

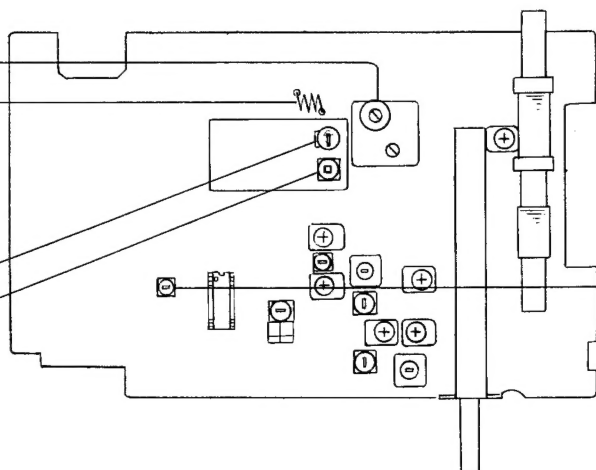


Carrier frequency: 98 MHz
OUTPUT level: 1 mV (60 dB)
Modulation: 400 Hz, 75 kHz deviation (100%)
Mode: MONO

1. Tune the set to 98 MHz.
2. Adjust IFT101 for a minimum reading on the distortion meter.

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
109.5 MHz	CT 001
87.1 MHz	L 001

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
109.5 MHz	CT002
87.1 MHz	L003



FH-100W

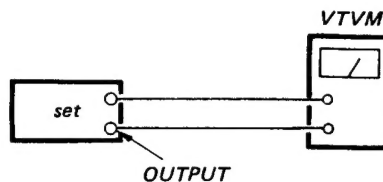
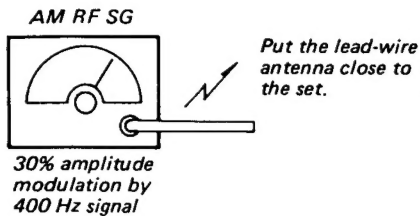
ST-137

MW

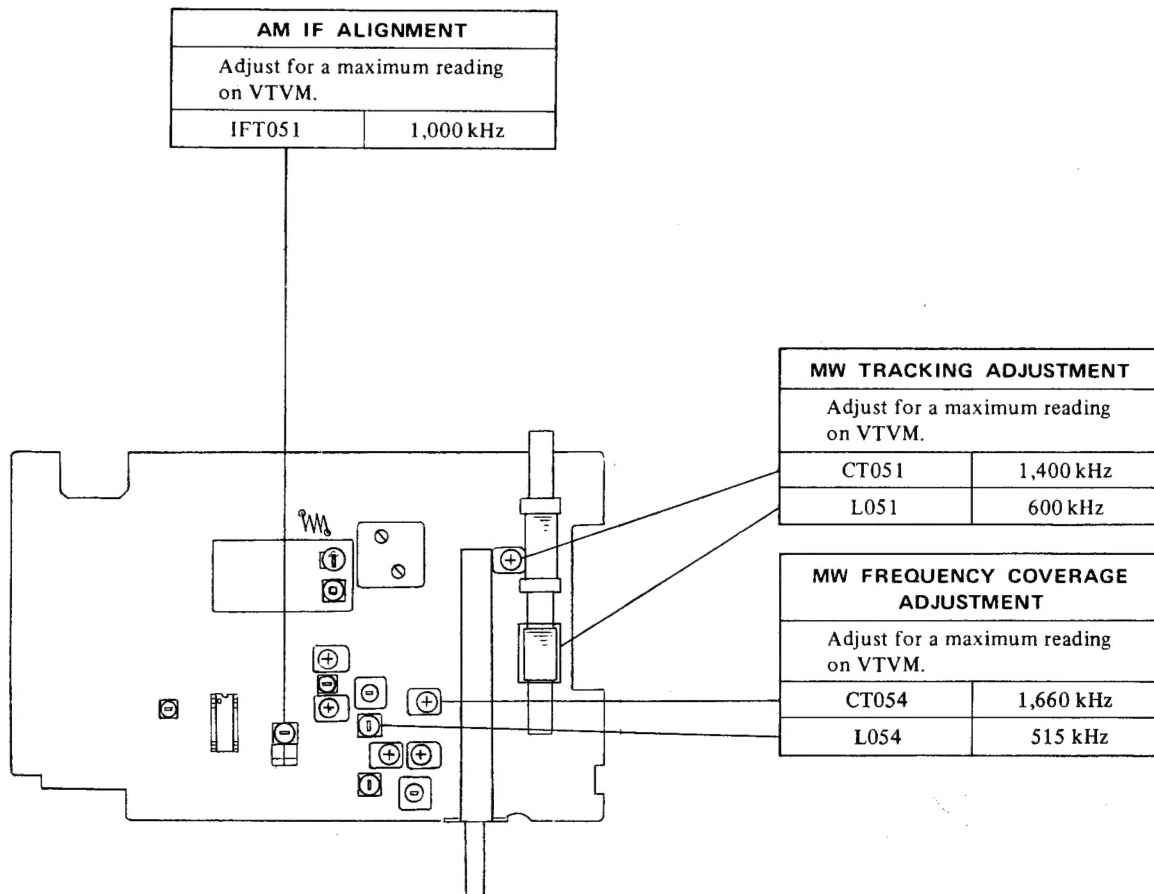
● **Setting:**

Band Switch: MW

● **Procedure:**



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.



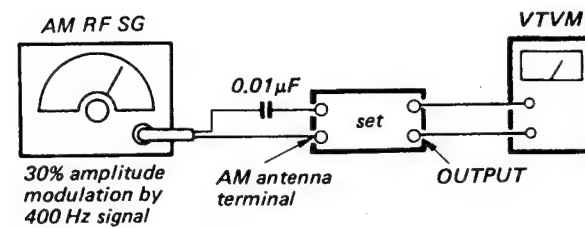
SW

- **Setting:**

Band Switch: SW_1/SW_2

FINE TUNING knob: mechanical center

- **Procedure:**

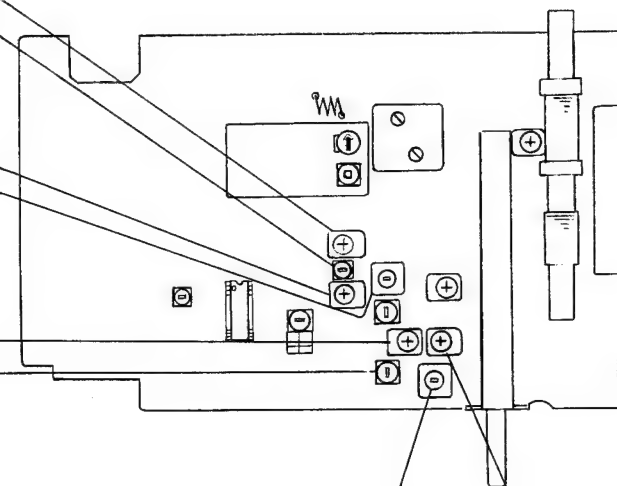


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

SW1 TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
7 MHz	CT052
3.5 MHz	L052

SW2 TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
20 MHz	CT053
10 MHz	L053

SW1 FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VTVM.	
7.6 MHz	CT055
3 MHz	L055



L056	CT056
9 MHz	22.4 MHz
Adjust for maximum reading on VTVM.	
SW2 FREQUENCY COVERAGE ADJUSTMENT	

MEMO

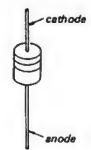
SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

— Conductor Side —

• Semiconductor Lead Layouts

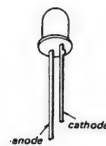
1SS202-1
HZ7A3L



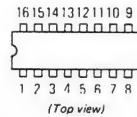
2SC2603-F
2SC2724-C



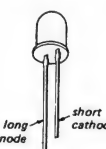
SLR-54MC3
SLH-54VC3



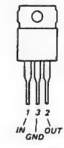
LA1260C
LA3401



SLR-40DC3

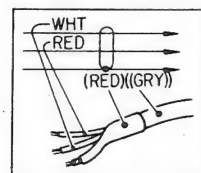


TA78008AP



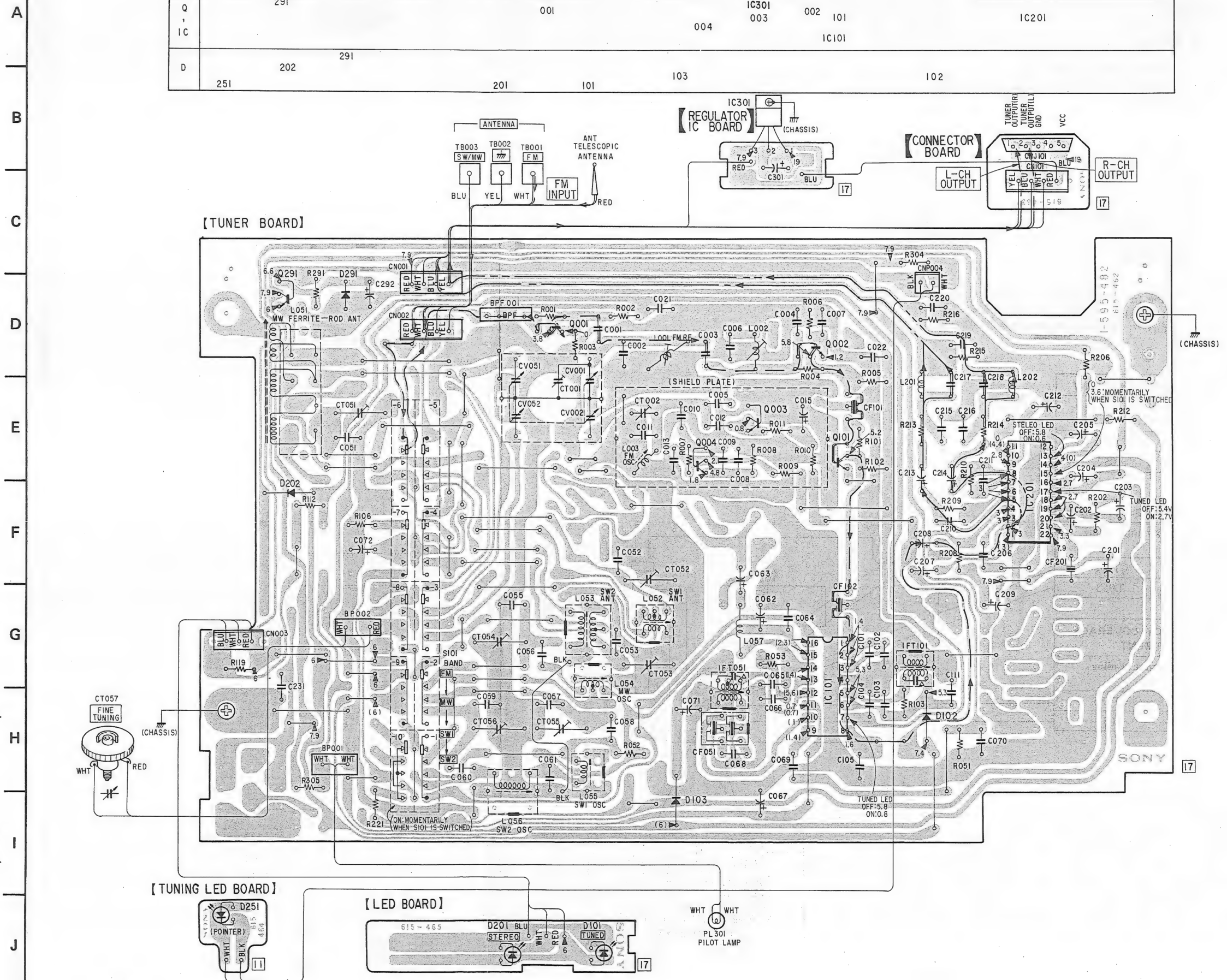
Note:

- Color code of sleeving over the end of the jacket.

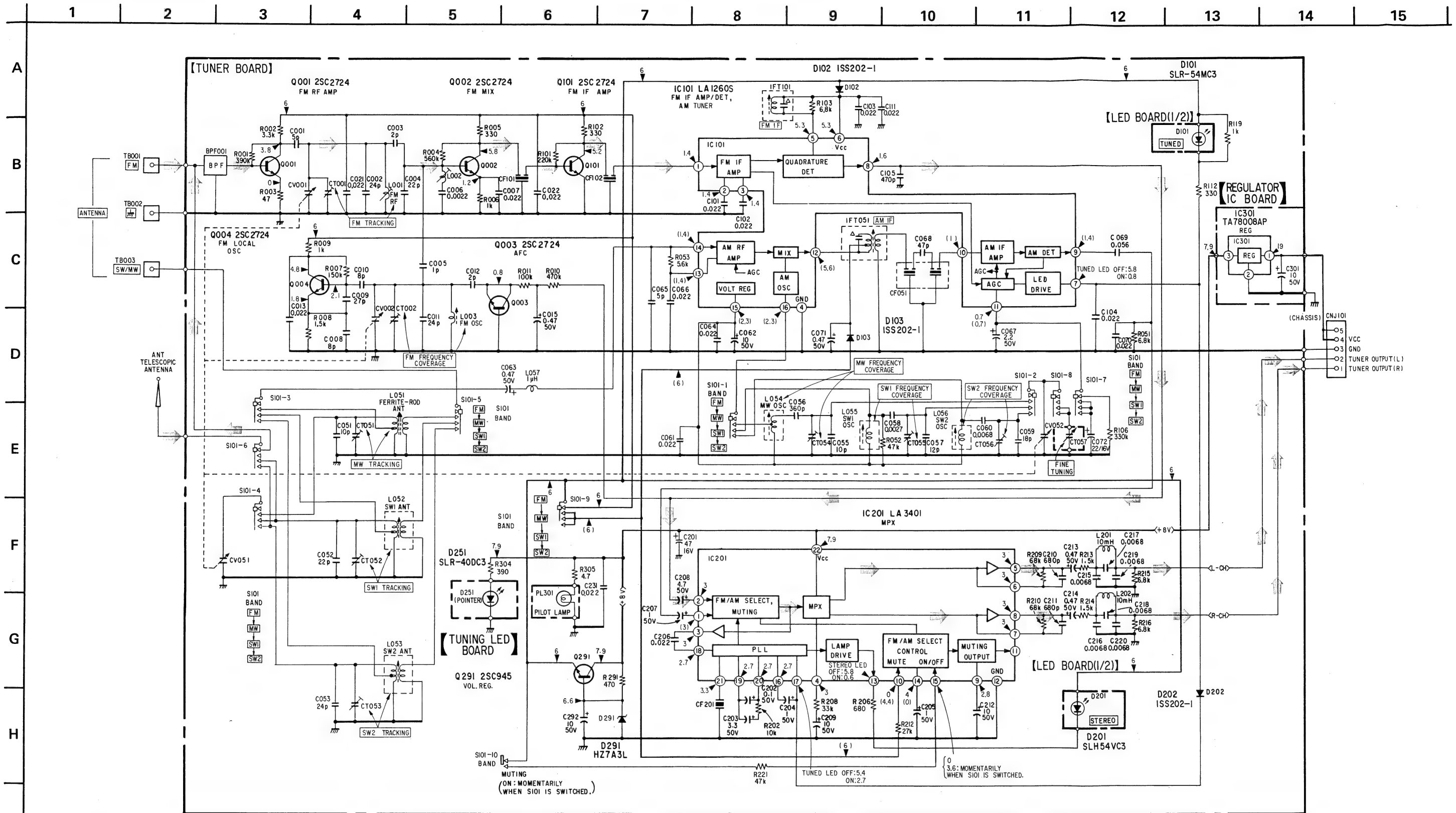


- —○— : parts extracted from the component side.
- —■— : part mounted on the conductor side.
- —□— : indicates side identified with part number.

- ——— : signal path
- ——— : L-CH signal path
- ——— : R-CH signal path



4-2. SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. pF : μF F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : signal path.
- : internal component.
- : B+ bus.
- : B- bus.
- : adjustment for repair.

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 $\text{k}\Omega/\text{V}$).
no mark: FM mode
(): MW or SW mode
- Voltage variations may be noted due to normal production tolerances.

• Switch

Ref. No.	Switch	Position
S101-1-9	BAND (-10: MUTING)	FM

SECTION 5
EXPLODED VIEWS AND PARTS LIST

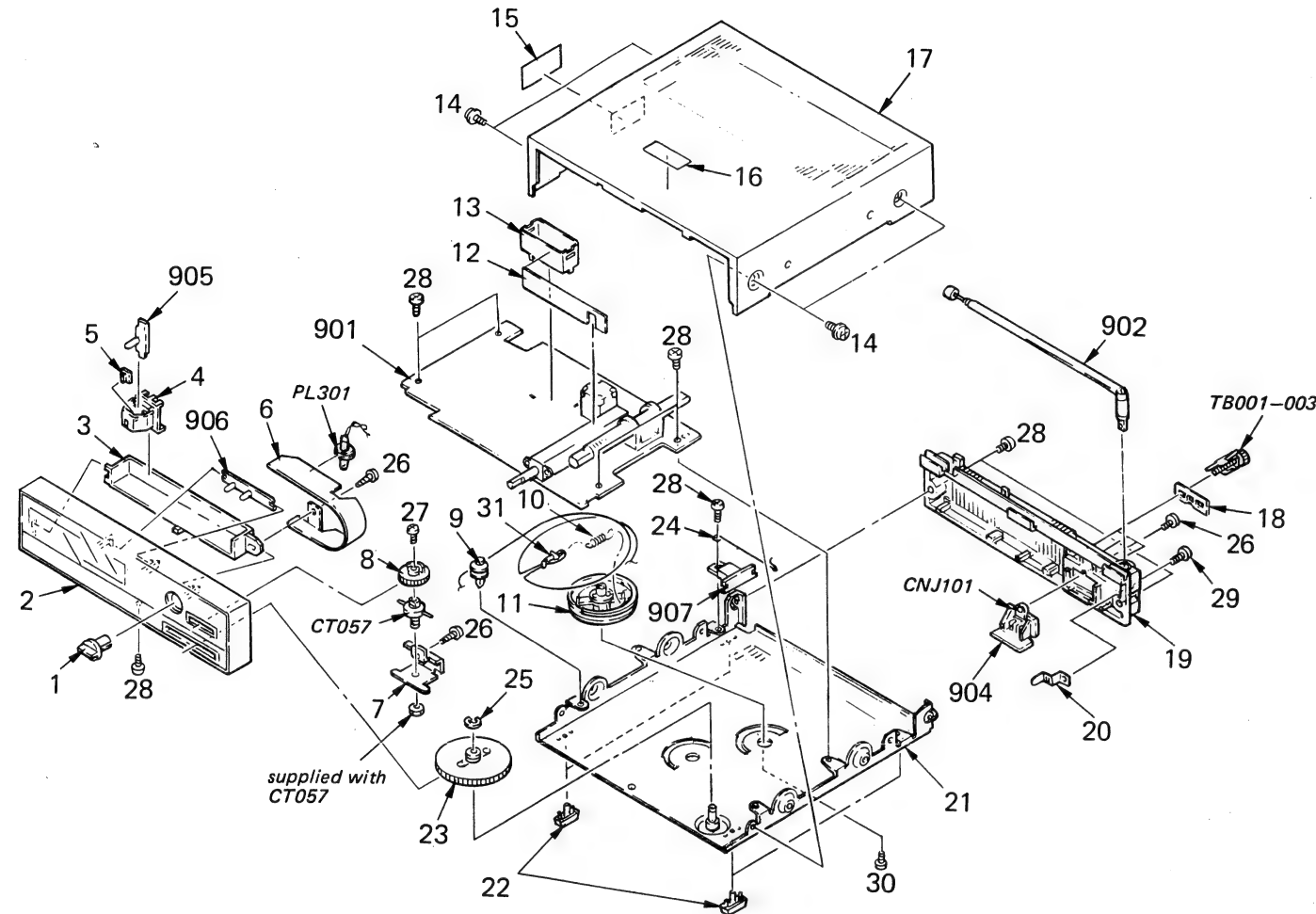
NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The construction parts of an assembled part are indicated with a collation number in the remark column.

(1)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	4-884-847-11	KNOB (ST), ROTARY SWITCH		23	X-4910-032-1	KNOB ASSY (B), IG	
2	X-4910-085-1	PANEL ASSY, FRONT		24	*4-909-612-01	HOLDER, LEAD WIRE	
3	*4-902-933-01	RAIL, POINTER		25	7-624-105-04	STOP RING 2.3, TYPE -E	
4	*4-909-616-01	TABEL, POINTER		26	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
5	*4-889-622-01	INDICATOR		27	7-621-772-10	SCREW +B 2X4	
6	*4-910-360-01	PLATE (D), LIGHT INTERCEPTION		28	7-685-871-01	SCREW +BVTT 3X6 (S)	
7	*4-910-333-01	BRACKET, TRIMMER		29	7-682-548-09	SCREW +B 3X8	
8	4-902-934-01	KNOB, FT		30	7-621-773-95	SCREW +B 2.6X6	
9	X-4856-325-0	PULLEY ASSY		31	7-623-616-01	EYELET, 2X3	
10	4-902-929-01	SPRING, EXTENSION		901	*A-4351-526-A	MOUNTED PCB, TUNER	
11	*4-902-938-01	DRUM, DIAL		902	1-501-270-00	ANTENNA, TELESCOPIC	
12	*4-910-351-01	PLATE (C), LIGHT INTERCEPTION		904	*1-615-463-11	PC BOARD, CONNECTOR	
13	*4-880-329-00	PLATE (E), SHIELD		905	*1-615-464-11	PC BOARD, TUNING LED	
14	4-886-821-21	SCREW, M3 CASE STOPPER		906	*1-615-465-11	PC BOARD, LED	
15	*4-914-315-01	LABEL, MODEL NUMBER (E)		907	*1-615-466-11	PC BOARD, REGULATOR IC BOARD	
16	4-884-927-00	LABEL (SYSTEM), CAUTION		CNJ101	1-562-067-00	SOCKET, CONNECTOR 5P	
17	X-4902-904-1	CASE ASSY		CT057	1-141-236-00	CAP, TRIMMER (FINE TUNING)	
18	4-902-931-01	LABEL, ANTENNA		PL301	1-518-582-11	LAMP, PILOT	
19	4-902-922-01	PLATE, JACK		TB001	1-536-742-00	TERMINAL BOARD, ANTENNA (FM)	
20	4-902-935-01	TERMINAL BOARD		TB002	1-536-742-00	TERMINAL BOARD, ANTENNA (GROUND)	
21	*X-4902-906-2	CHASSIS ASSY		TB003	1-536-742-00	TERMINAL BOARD, ANTENNA (SW/MW)	
22	X-4902-937-1	FOOT ASSY, RUBBER					

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*A-4351-526-A	MOUNTED PCB, TUNER
902	1-501-270-00	ANTENNA, TELESCOPIC
903	*1-508-809-00	BASE POST (14MM) 2P
904	*1-615-463-11	PC BOARD, CONNECTOR
905	*1-615-464-11	PC BOARD, TUNING LED
906	*1-615-465-11	PC BOARD, LED
907	*1-615-466-11	PC BOARD, REGULATOR IC BOARD
BPF001	1-231-720-00	FILTER, BANDPASS
C001	1-102-942-00	CERAMIC 5PF 0.5PF 50V
C002	1-102-960-00	CERAMIC 24PF 5% 50V
C003	1-102-935-00	CERAMIC 2PF 0.25PF 50V
C004	1-102-959-00	CERAMIC 22PF 5% 50V
C005	1-102-934-00	CERAMIC 1PF 0.25PF 50V
C006	1-102-121-00	CERAMIC 0.0022MF 10% 50V
C007	1-101-005-00	CERAMIC 0.022MF 50V
C008	1-102-684-00	CERAMIC 8PF 0.5PF 50V
C009	1-102-806-00	CERAMIC 27PF 5% 50V
C010	1-102-684-00	CERAMIC 8PF 0.5PF 50V
C011	1-102-672-00	CERAMIC 24PF 5% 50V
C012	1-102-935-00	CERAMIC 2PF 0.25PF 50V
C013	1-101-005-00	CERAMIC 0.022MF 50V
C015	1-123-379-00	ELECT 0.47MF 20% 50V
C021	1-101-005-00	CERAMIC 0.022MF 50V
C022	1-101-005-00	CERAMIC 0.022MF 50V
C051	1-102-947-00	CERAMIC 10PF 5% 50V
C052	1-102-959-00	CERAMIC 22PF 5% 50V
C053	1-102-960-00	CERAMIC 24PF 5% 50V
C055	1-102-253-00	CERAMIC 10PF 0.5PF 50V
C056	1-104-066-00	POLYSTYRENE 360PF 5% 50V
C057	1-102-289-00	CERAMIC 12PF 5% 50V
C058	1-103-735-00	POLYSTYRENE 0.0027MF 5% 50V
C059	1-102-295-00	CERAMIC 18PF 5% 50V
C060	1-103-745-00	POLYSTYRENE 0.0068MF 5% 50V
C061	1-101-005-00	CERAMIC 0.022MF 50V
C062	1-123-356-00	ELECT 10MF 20% 50V
C063	1-123-379-00	ELECT 0.47MF 20% 50V
C064	1-101-005-00	CERAMIC 0.022MF 50V
C065	1-102-942-00	CERAMIC 5PF 0.5PF 50V
C066	1-101-005-00	CERAMIC 0.022MF 50V
C067	1-123-381-00	ELECT 2.2MF 20% 50V
C068	1-101-880-00	CERAMIC 47PF 5% 50V
C069	1-136-162-00	MYLAR 0.056MF 10% 50V
C070	1-101-005-00	CERAMIC 0.022MF 50V
C071	1-123-379-00	ELECT 0.47MF 20% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C072	1-123-330-00	ELECT 22MF 20% 16V
C101	1-101-005-00	CERAMIC 0.022MF 50V
C102	1-101-005-00	CERAMIC 0.022MF 50V
C103	1-101-005-00	CERAMIC 0.022MF 50V
C104	1-101-005-00	CERAMIC 0.022MF 50V
C105	1-102-114-00	CERAMIC 470PF 10% 50V
C111	1-101-005-00	CERAMIC 0.022MF 50V
C201	1-123-332-00	ELECT 47MF 20% 16V
C202	1-123-607-00	ELECT 0.1MF 20% 50V
C203	1-123-382-00	ELECT 3.3MF 20% 50V
C204	1-123-380-00	ELECT 1MF 20% 50V
C205	1-123-380-00	ELECT 1MF 20% 50V
C206	1-101-005-00	CERAMIC 0.022MF 50V
C207	1-123-380-00	ELECT 1MF 20% 50V
C208	1-123-369-00	ELECT 4.7MF 20% 50V
C209	1-123-356-00	ELECT 10MF 20% 50V
C210	1-162-292-31	CERAMIC 680PF 10% 50V
C211	1-162-292-31	CERAMIC 680PF 10% 50V
C212	1-123-356-00	ELECT 10MF 20% 50V
C213	1-123-379-00	ELECT 0.47MF 20% 50V
C214	1-123-379-00	ELECT 0.47MF 20% 50V
C215	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C216	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C217	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C218	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C219	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C220	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C231	1-101-005-00	CERAMIC 0.022MF 50V
C292	1-123-356-00	ELECT 10MF 20% 50V
C301	1-123-356-00	ELECT 10MF 20% 50V
CF051	1-527-937-00	FILTER, CERAMIC
CF101	1-527-964-00	FILTER, CERAMIC
CF102	1-527-964-00	FILTER, CERAMIC
CF201	1-567-250-11	OSCILLATOR, CERAMIC
CNJ101	1-562-067-00	SOCKET, CONNECTOR 5P
CNP001*1-562-249-00		SOCKET, CONNECTOR 4P
CNP002*1-562-249-00		SOCKET, CONNECTOR 4P
CNP003*1-562-327-00		SOCKET, CONNECTOR 3P
CNP004*1-564-505-11		PLUG, CONNECTOR 2P
CNP101*1-562-249-00		SOCKET, CONNECTOR 4P
CT002	1-141-263-11	CAP, TRIMMER
CT051	1-141-179-12	CAP, VAR, TRIMMER
CT052	1-141-179-12	CAP, VAR, TRIMMER
CT053	1-141-179-12	CAP, VAR, TRIMMER
CT054	1-141-179-12	CAP, VAR, TRIMMER
CT055	1-141-179-12	CAP, VAR, TRIMMER

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CT056	1-141-179-12	CAP, VAR, TRIMMER
CT057	1-141-236-00	CAP, TRIMMER (FINE TUNING)
CT001	1-151-440-00	CAP, TUNING, POLYETHYLENE
CV001		
CV002		
CV051		
CV052		
D101	8-719-908-50	DIODE SLR-54MC3
D102	8-719-107-94	DIODE 1SS202-1
D103	8-719-107-94	DIODE 1SS202-1
D201	8-719-904-08	DIODE SLH-54VC3
D202	8-719-107-94	DIODE 1SS202-1
D251	8-719-920-25	DIODE SLR-40DC3
D291	8-719-910-73	DIODE HZ7A3L
IC101	8-759-801-24	IC LA1260S
IC201	8-759-801-80	IC LA3401
IC301	1-806-809-11	IC TA78008AP
IFT051	1-404-413-00	TRANSFORMER, IF
IFT101	1-404-534-11	TRANSFORMER, IF
L001	*1-420-884-00	COIL, AIR CORE, FM RF
L002	*1-420-840-00	COIL
L003	1-459-412-00	COIL (WITH CORE), FM OSC
L051	1-402-075-11	ANTENNA, FERRITE-ROD (MW)
L052	1-401-984-00	COIL (SW1 ANT)
L053	1-401-985-00	COIL (SW2 ANT)
L054	1-406-065-00	COIL (MW OSC)
L055	1-406-025-00	COIL (SW1 OSC)
L056	1-406-026-00	COIL (SW2 OSC)
L057	1-408-551-00	MICRO INDUCTOR 1UH
L201	1-408-257-00	MICRO INDUCTOR 10MMH
L202	1-408-257-00	MICRO INDUCTOR 10MMH
PL301	1-518-582-11	LAMP, PILOT
Q001	8-729-672-42	TRANSISTOR 2SC2724-C
Q002	8-729-672-42	TRANSISTOR 2SC2724-C
Q003	8-729-672-42	TRANSISTOR 2SC2724-C
Q004	8-729-672-42	TRANSISTOR 2SC2724-C
Q101	8-729-672-42	TRANSISTOR 2SC2724-C
Q291	8-729-606-33	TRANSISTOR 2SC2603F

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R001	1-247-893-00	CARBON	390K	5%	1/6W
R002	1-247-843-00	CARBON	3.3K	5%	1/6W
R003	1-247-799-00	CARBON	47	5%	1/6W
R004	1-247-897-00	CARBON	560K	5%	1/6W
R005	1-247-819-00	CARBON	330	5%	1/6W
R006	1-249-417-11	CARBON	1K	5%	1/6W
R007	1-247-883-00	CARBON	150K	5%	1/6W
R008	1-249-419-11	CARBON	1.5K	5%	1/6W
R009	1-249-417-11	CARBON	1K	5%	1/6W
R010	1-247-895-00	CARBON	470K	5%	1/6W
R011	1-249-441-11	CARBON	100K	5%	1/6W
R051	1-247-851-00	CARBON	6.8K	5%	1/6W
R052	1-249-437-11	CARBON	47K	5%	1/6W
R053	1-247-849-00	CARBON	5.6K	5%	1/6W
R101	1-247-887-00	CARBON	220K	5%	1/6W
R102	1-247-819-00	CARBON	330	5%	1/6W
R103	1-247-851-00	CARBON	6.8K	5%	1/6W
R106	1-247-891-00	CARBON	330K	5%	1/6W
R112	1-247-819-00	CARBON	330	5%	1/6W
R119	1-249-417-11	CARBON	1K	5%	1/6W
R202	1-249-429-11	CARBON	10K	5%	1/6W
R206	1-249-415-11	CARBON	680	5%	1/6W
R208	1-249-435-11	CARBON	33K	5%	1/6W
R209	1-247-875-00	CARBON	68K	5%	1/6W
R210	1-247-875-00	CARBON	68K	5%	1/6W
R212	1-249-434-11	CARBON	27K	5%	1/6W
R213	1-249-419-11	CARBON	1.5K	5%	1/6W
R214	1-249-419-11	CARBON	1.5K	5%	1/6W
R215	1-247-851-00	CARBON	6.8K	5%	1/6W
R216	1-247-851-00	CARBON	6.8K	5%	1/6W
R221	1-249-437-11	CARBON	47K	5%	1/6W
R291	1-247-823-00	CARBON	470	5%	1/6W
R304	1-247-821-00	CARBON	390	5%	1/6W
R305	1-247-775-00	CARBON	4.7	5%	1/6W
S101	1-570-284-11	SWITCH, ROTARY SLIDE (BAND)			
TB001	1-536-742-00	TERMINAL BOARD, ANTENNA (FM)			
TB002	1-536-742-00	TERMINAL BOARD, ANTENNA (GROUND)			
TB003	1-536-742-00	TERMINAL BOARD, ANTENNA (SW/MW)			

FH-100W
ST-137

INTEGRATED STEREO AMPLIFIER (TA-137)

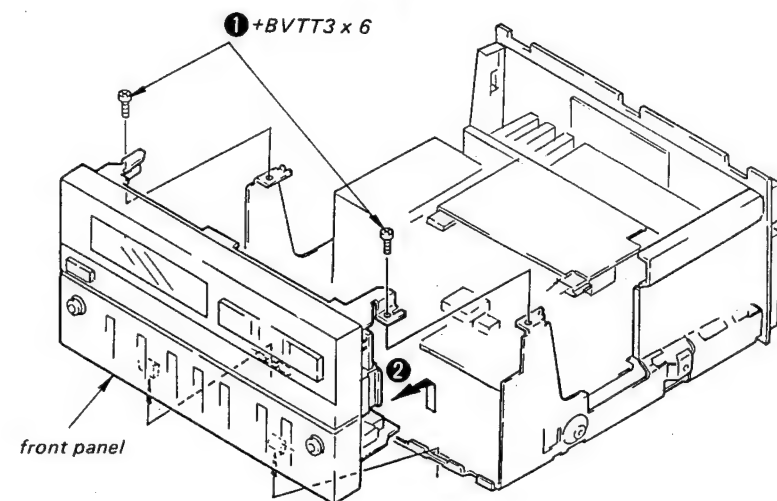
NOTE: TA-137 is an integrated stereo amplifier unit in FH-100W.

1. DISASSEMBLY

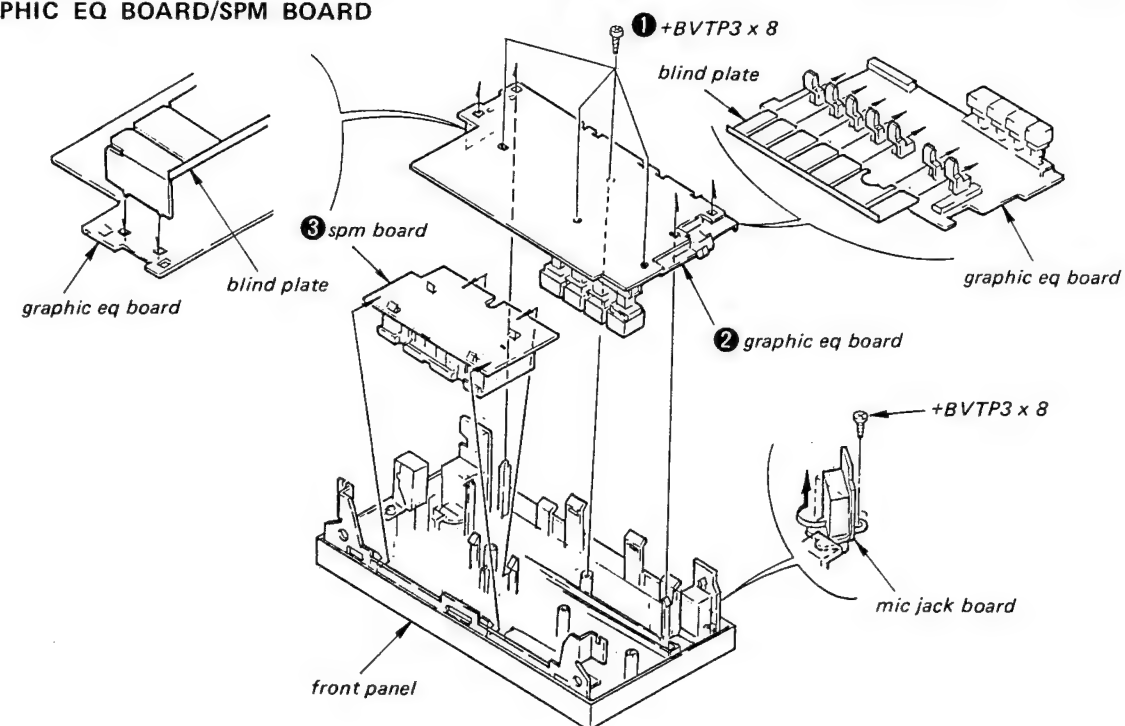
Note: Follow the disassembly procedure in the numerical order given.

Remove the case.
(four screws)

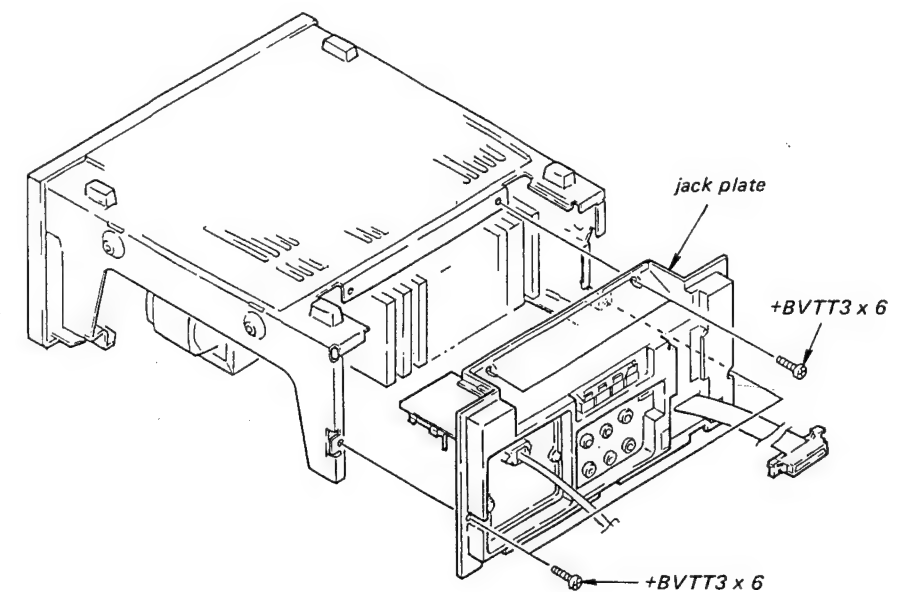
FRONT PANEL



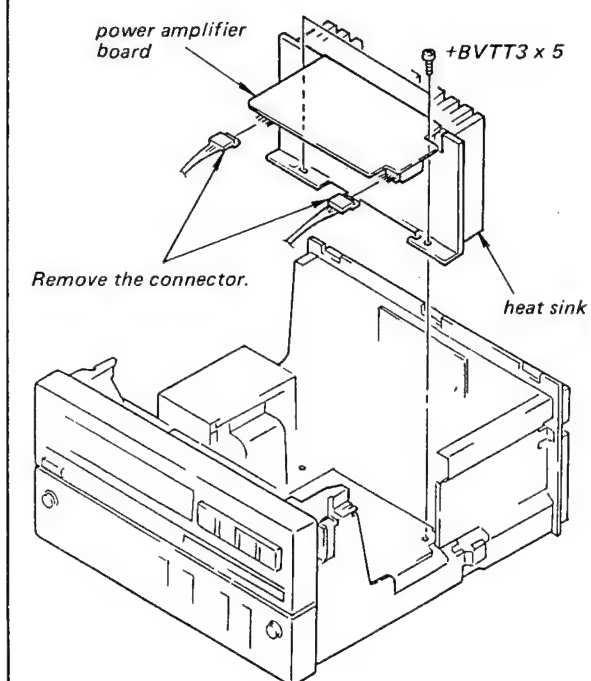
GRAPHIC EQ BOARD/SPM BOARD



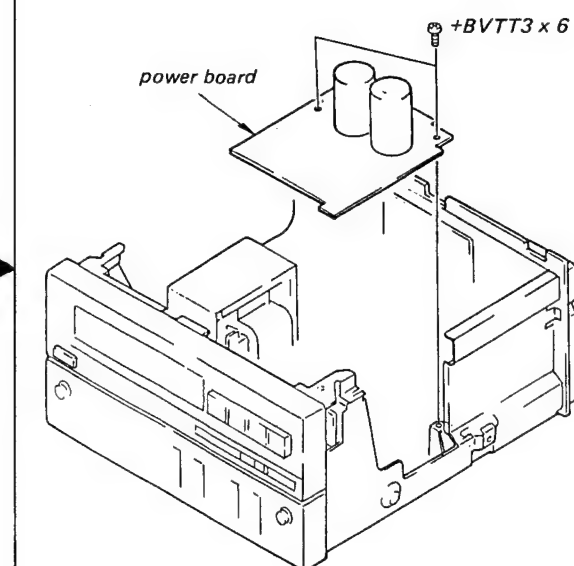
JACK PLATE



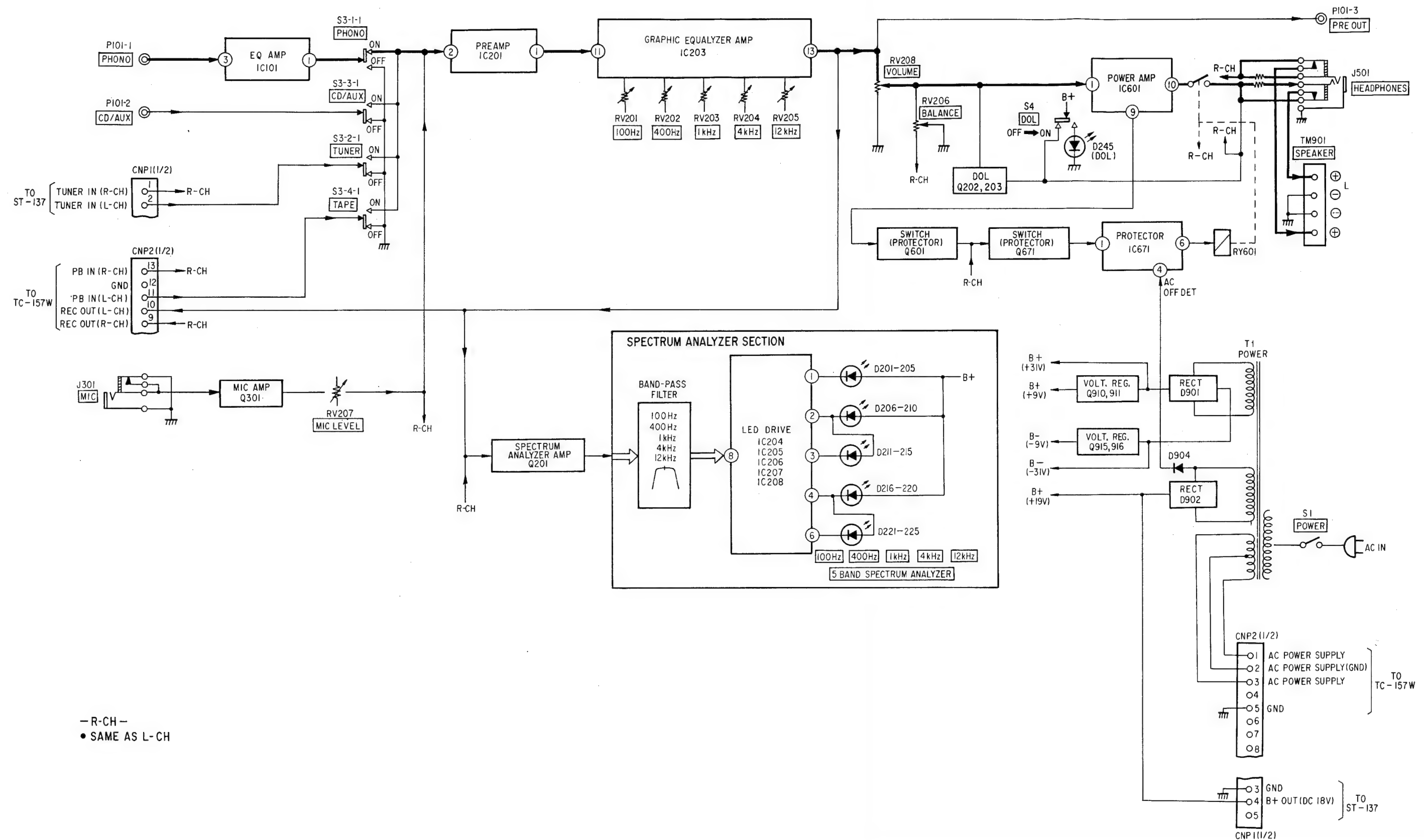
POWER AMPLIFIER BOARD



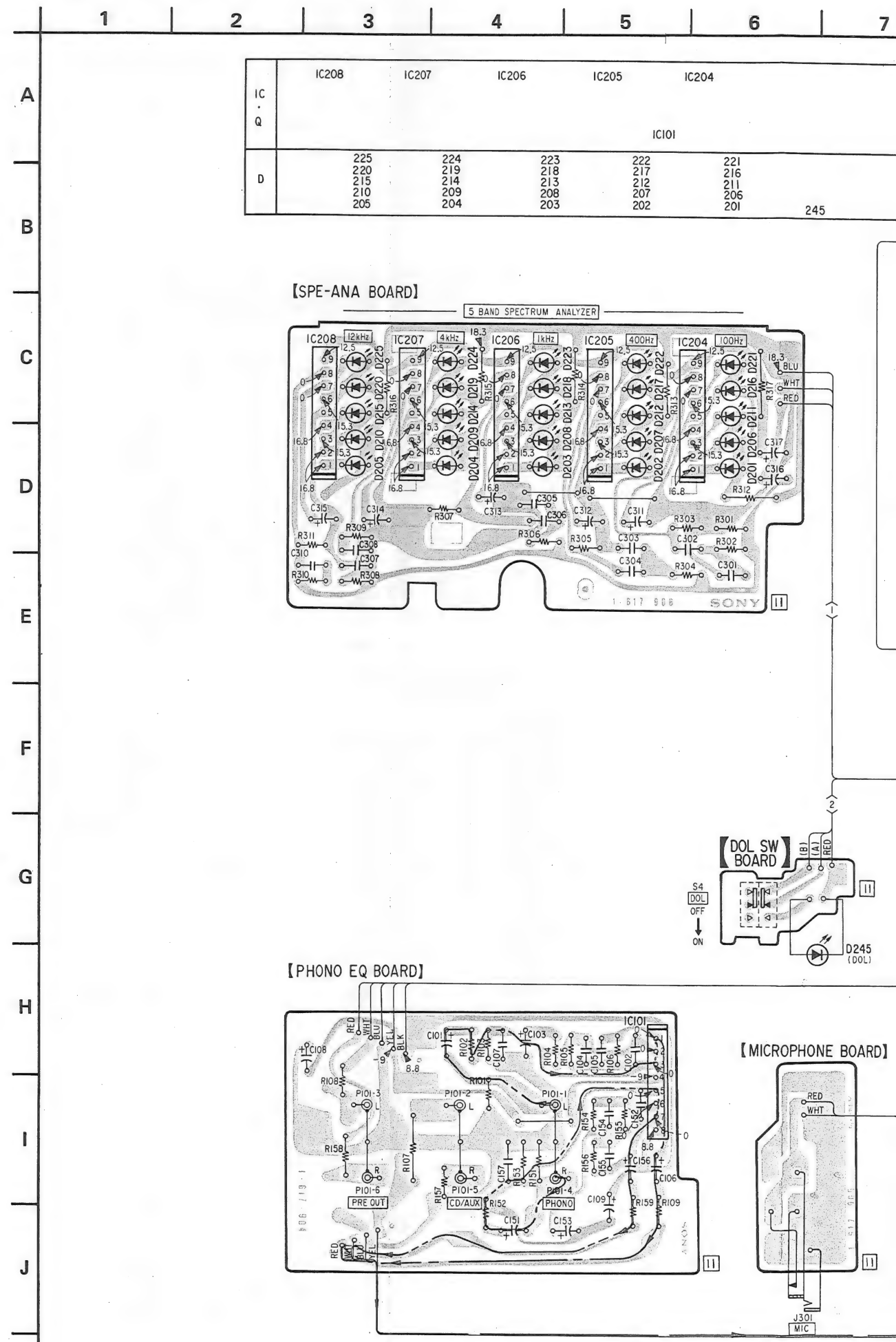
POWER BOARD



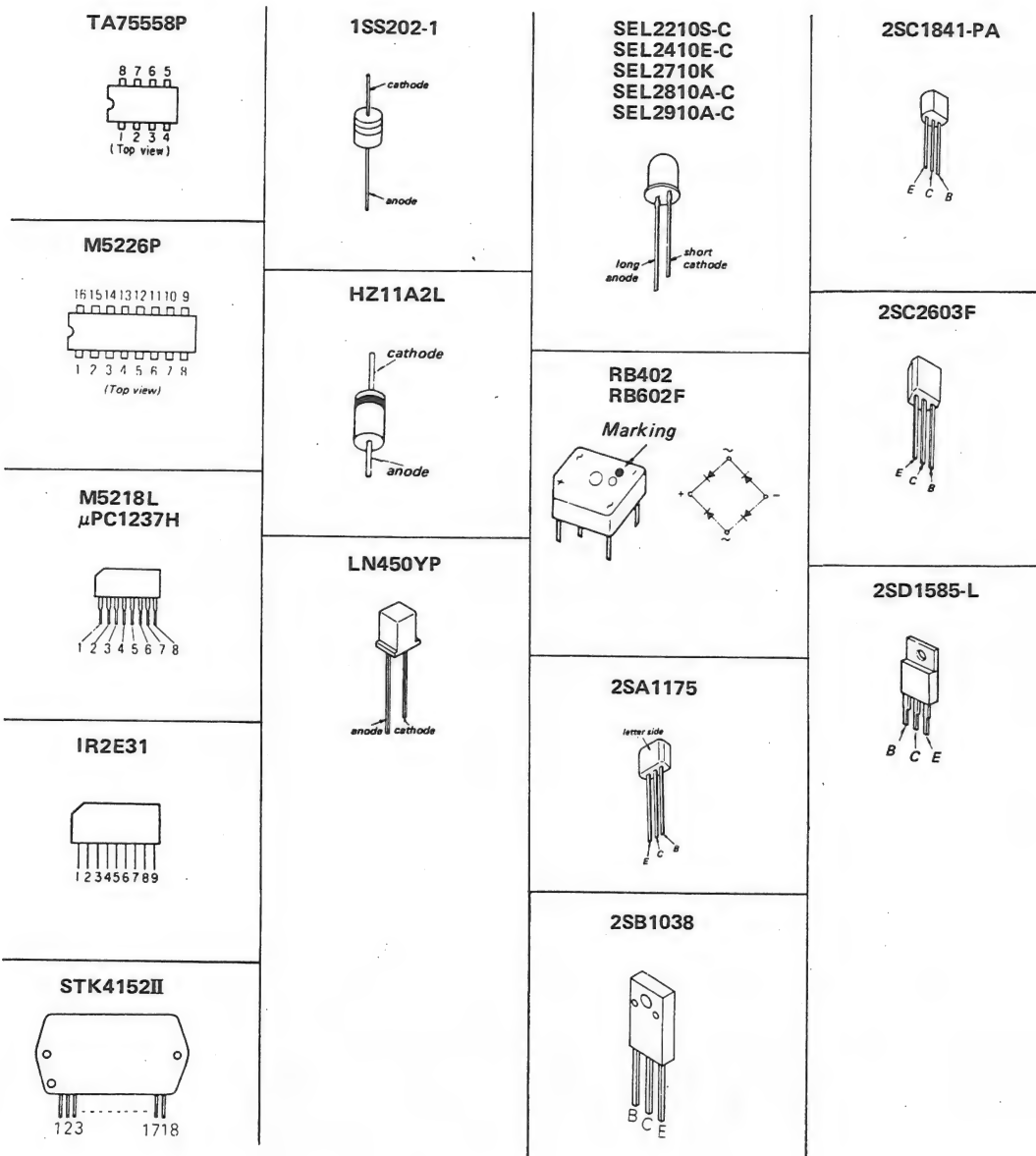
2. BLOCK DIAGRAM



3. MOUNTING DIAGRAM



● Semiconductor Lead Layouts



- Note:
- : parts extracted from the component side.
 - : part mounted on the conductor side.
 - : signal path
 - : L-CH signal path
 - : R-CH signal path

FH-100W TA-137 FH-100W TA-137

6

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12

13

14

15

16

17

18

19

20

21

A

B

C

D

E

F

G

H

I

J

221
216
211
206
201

245

IC201
Q301

IC202

Q915
Q916
IC203

Q201

Q910
Q911
Q252
Q202
Q203
Q253

Q651

IC601
Q601

Q671

IC671

671

IC
Q

D

904
902
901
915

910
246
247, 248

[POWER BOARD]

[POWER AMP BOARD]

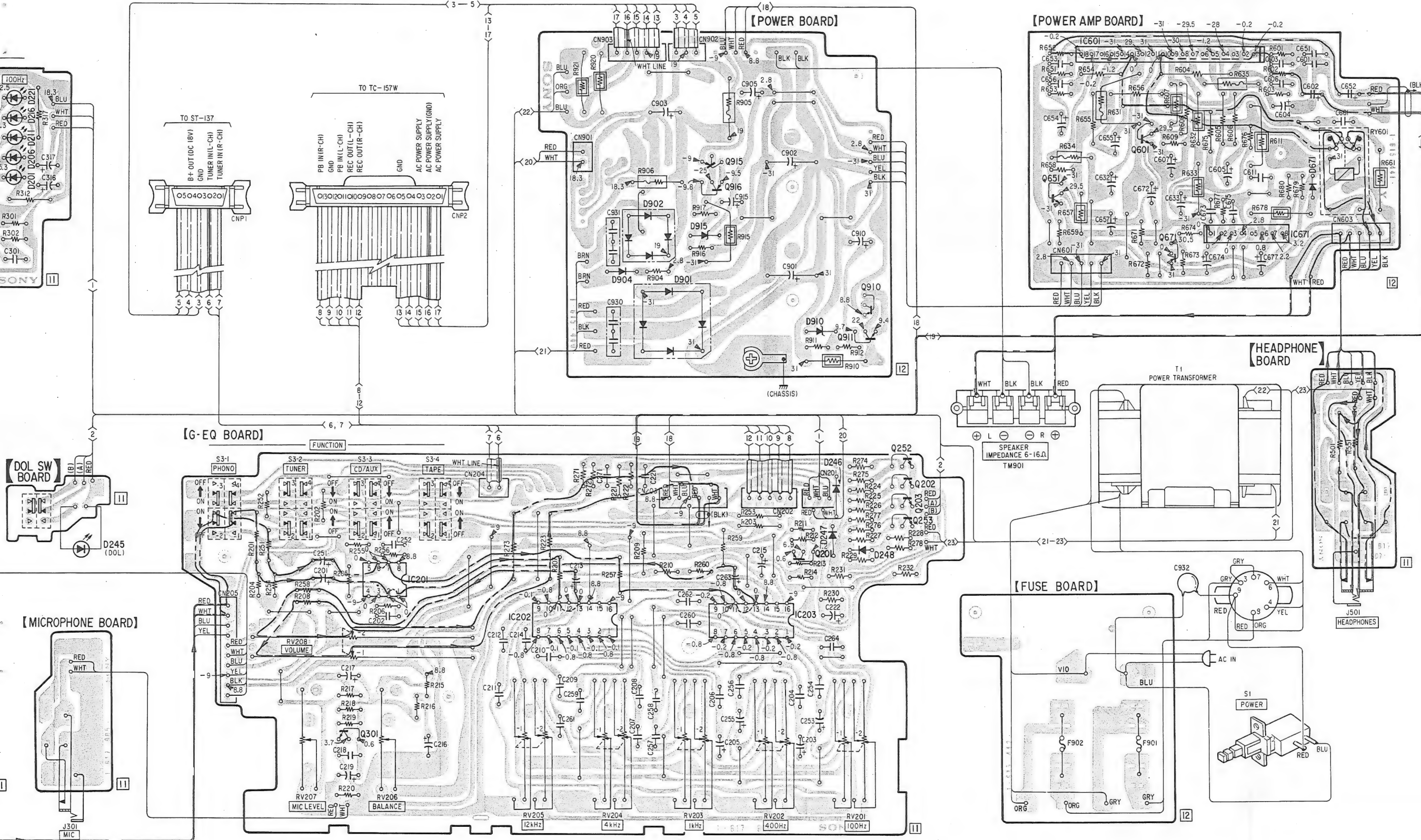
[G-EQ BOARD]

[HEADPHONE BOARD]

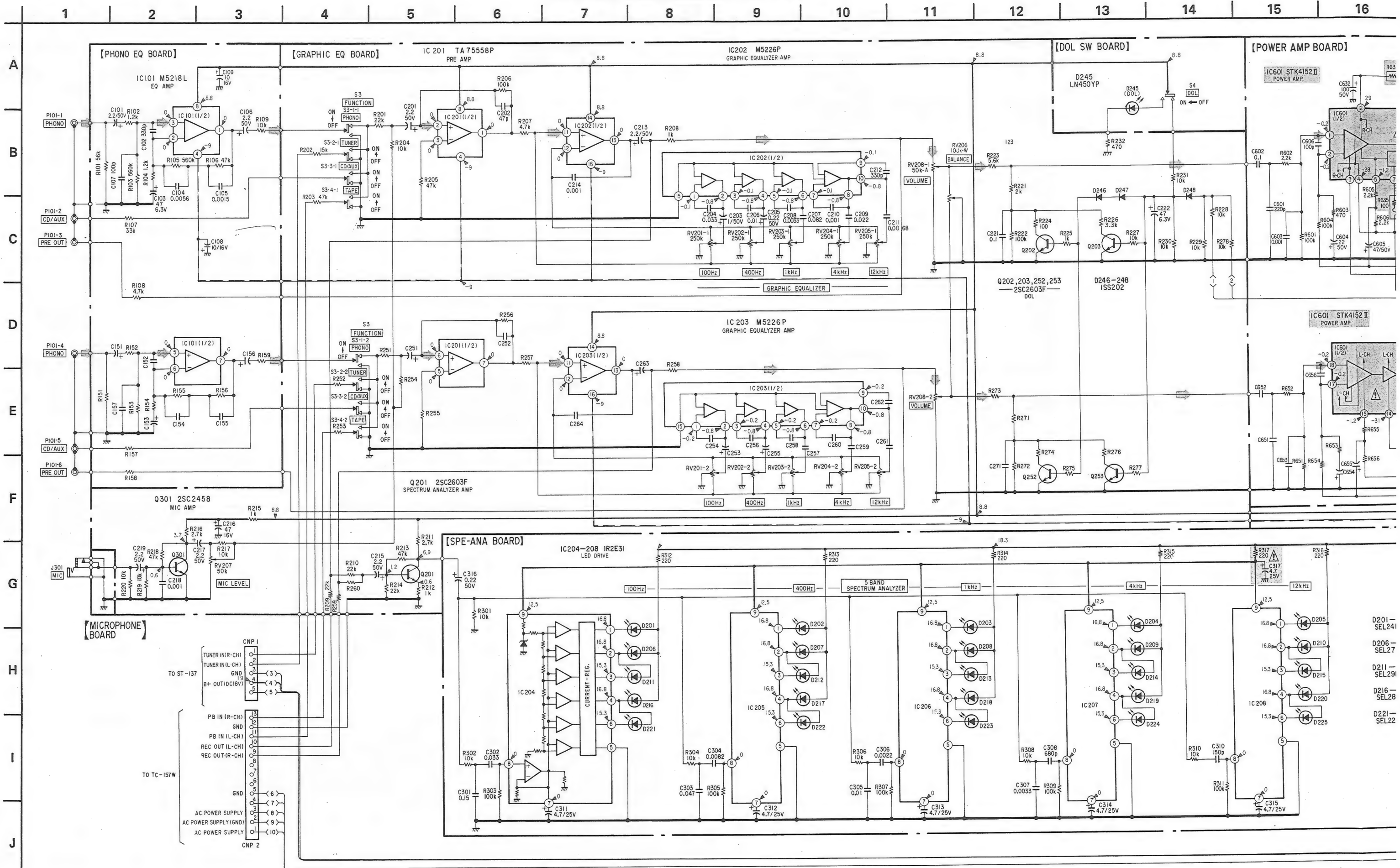
[FUSE BOARD]

[DOL SW BOARD]




[MICROPHONE BOARD]






4. SCHEMATIC DIAGRAM

FH-100W
TA-137FH-100W
TA-137




- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
-  : signal path.
- Components for right channel have same values as for left channel. Reference numbers are coded from 150, 250, and 650.
-  : nonflammable resistor.
-  : fusible resistor.
- Switch

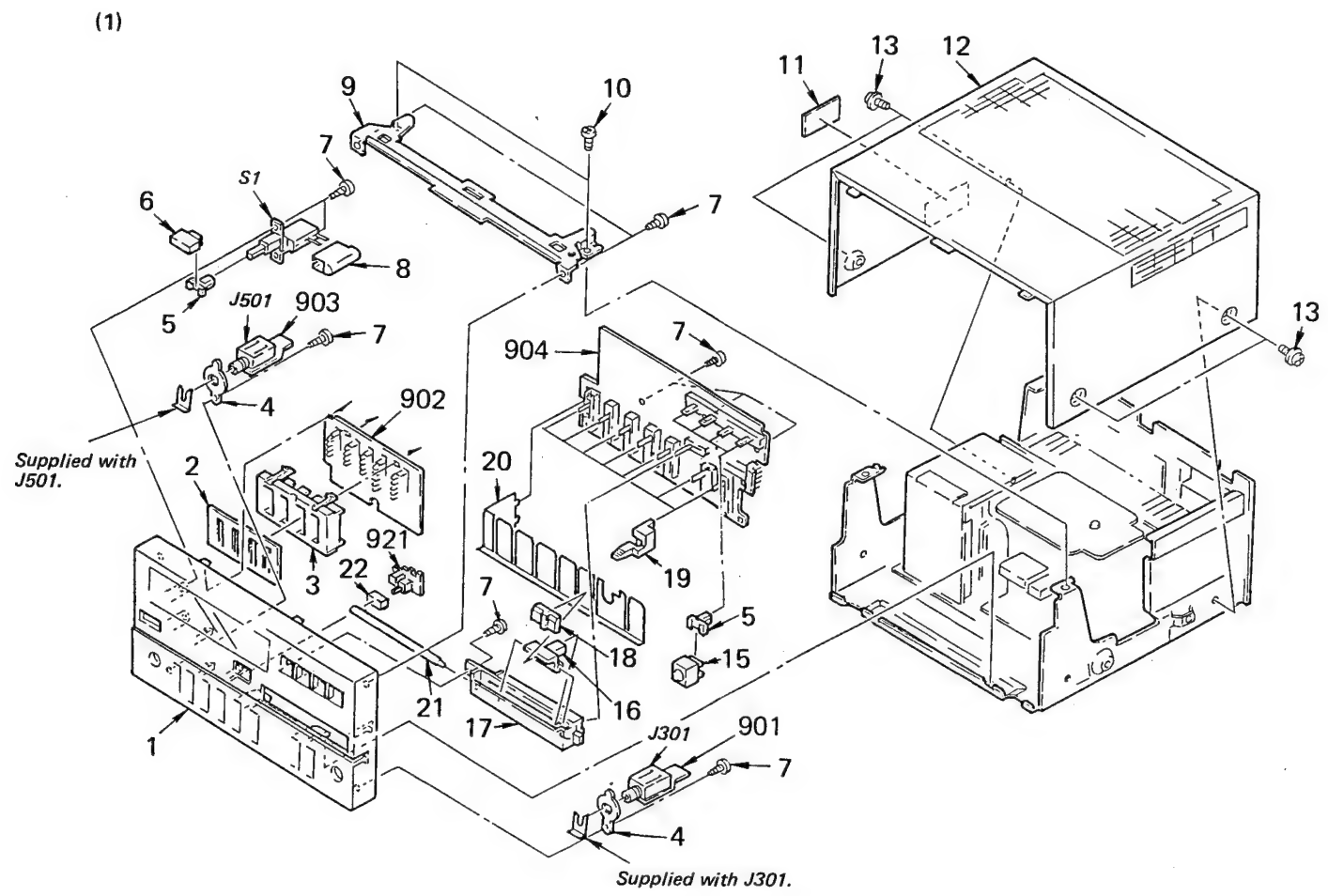
-  : B+ bus.
-  : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 k Ω /V).
- Voltage variations may be noted due to normal production tolerances.


Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

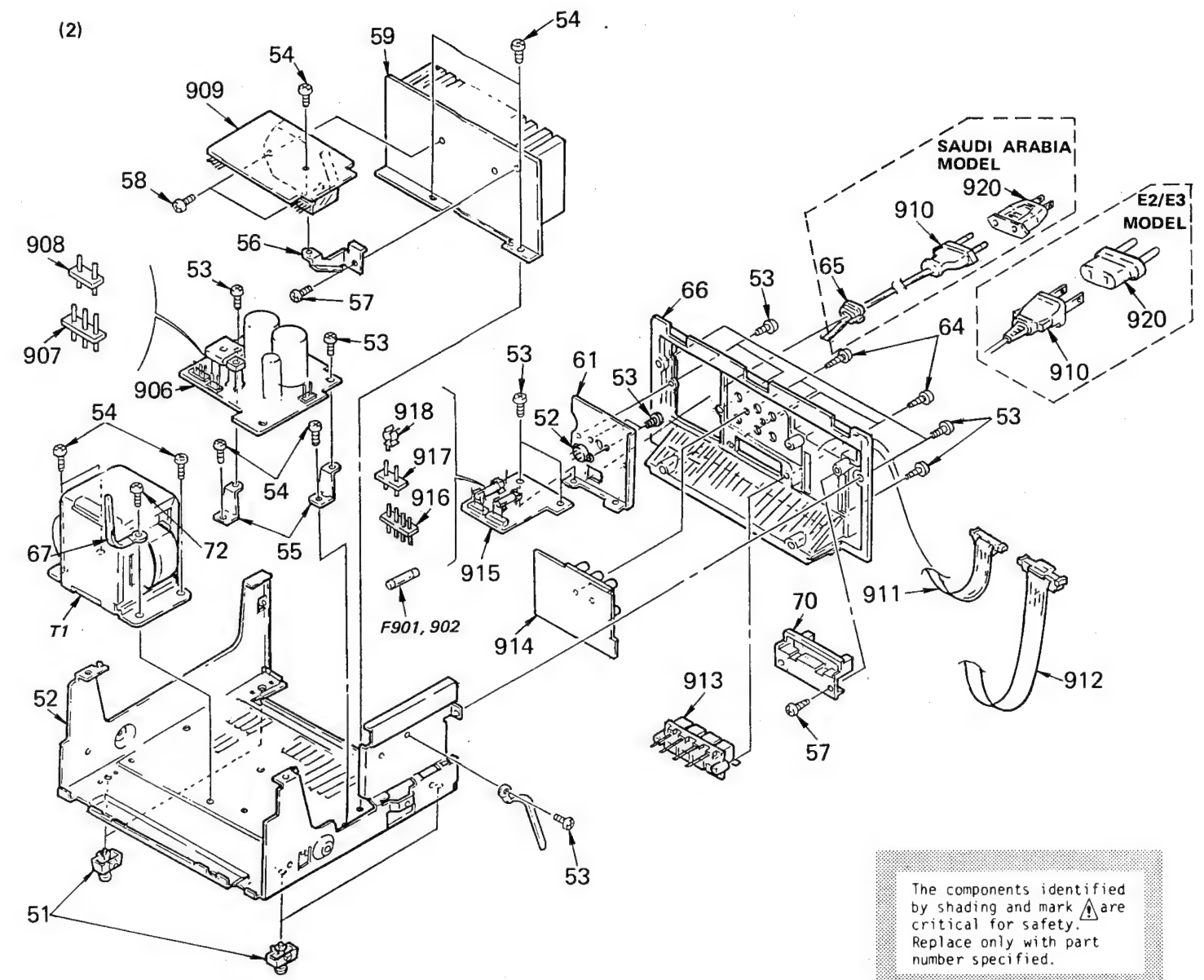
5. EXPLODED VIEWS AND PARTS LIST









NOTE:
The mechanical parts with no reference number in the exploded views are not supplied.
Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.






No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-4910-053-1	PANEL ASSY, FRONT		16	*4-910-061-11	JOINT, CONTROL	
2	*4-909-975-11	PLATE (5 GANG), INDICATION		17	*4-910-074-11	HOUSE, CONTROL	
3	*4-909-976-01	HOUSE (5 GANG), LAMP		18	4-910-075-11	KNOB, CONTROL	
4	*4-910-065-01	BRACKET, JACK		19	4-909-977-21	KNOB, GRAPHIC EQUALIZER	
5	4-910-058-01	JOINT, KNOB		20	*4-910-076-01	PLATE (L/M), BLIND	
6	4-910-056-11	KNOB, POWER		21	*4-910-062-01	SHAFT, SLIDE	
7	7-685-646-11	SCREW +BVTP 3X8 TYPE2 N-S		22	4-910-392-11	KNOB, SQUARE	
8	3-575-524-00	COVER, POWER SWITCH		901	*1-617-905-11	PC BOARD, MICROPHONE	
9	*4-910-068-01	JOINT		902	*1-617-906-11	PC BOARD, SPECTRUM ANALYZER	
10	7-685-871-01	SCREW +BVTT 3X6 (S)		903	*1-617-907-11	PC BOARD, HEADPHONE	
11	*4-914-319-01	LABEL, MODEL NUMBER (E2/E3)		904	*A-4375-253-A	MOUNTED PCB, GRAPHIC EQ	
12	4-910-078-31	CASE		921	*1-617-909-11	PC BOARD, DOL	
13	4-886-821-01	SCREW, M3 CASE		S1	 .1-553-318-51	SWITCH, PUSH (1 KEY)(POWER)	
15	4-910-057-11	KNOB, SQUARE					



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	X-4902-937-1	FOOT ASSY, RUBBER		906	*1-615-440-11	PC BOARD, POWER	
52	*4-902-974-01	CHASSIS		907	*1-535-116-00	TERMINAL	
53	7-685-871-01	SCREW +BVTT 3X6 (S)		908	*1-535-115-00	TERMINAL	
54	7-682-546-04	SCREW +BVTT 3X5 (S)		909	*A-4388-535-A	MOUNTED PCB, POWER AMP	
55	*4-910-060-01	BRACKET, PC BOARD		910	 .1-534-817-XX	(Saudi Arabia)...CORD, POWER EULO PLUG	
56	*4-910-064-01	BRACKET (H), PC BOARD			 .1-551-472-00	(E).....CORD, POWER	
57	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3		911	1-557-896-11	CORD (WITH CONNECTOR)(5P)	
58	7-685-650-71	SCREW +BVTP 3X16 TYPE2 IT-3		912	1-557-897-11	CORD (WITH CONNECTOR)(13P)	
59	*4-910-077-01	HEAT SINK		913	1-536-705-21	TERMINAL BOARD (5P)	
61	*4-910-073-11	BRACKET, INLET		914	*1-617-904-11	PC BOARD, PHONO EQ	
64	7-685-647-14	SCREW +BVTP 3X10 TYPE2 N-S		915	*1-615-442-11	PC BOARD, FUSE	
65	3-703-244-00	(Saudi Arabia)...BUSHING (2104), CORD		916	*1-535-141-00	BASE POST 22MM (10MM PITCH) 4P	
	3-703-571-00	BUSHING (S) (4516), CORD		917	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	
66	4-910-079-01	PLATE, JACK		918	1-533-162-00	HOLDER, FUSE	
67	*3-703-150-11	CLAMP		920	 .1-526-565-00	(E).....AC PLUG ADAPTOR	
70	*4-884-826-11	HOLDER (A), WIRE			 .1-506-409-00	(Saudi Arabia)...ADAPTOR, CONVERSION	
72	7-685-751-09	SCREW +BVTT 3X6 (S)		F901	 .1-532-285-00	FUSE, TIME-LAG	
				F902	 .1-532-285-00	FUSE, TIME-LAG	
				S2	 .1-526-576-51	SELECTOR, POWER VOLTAGE	
				T1	 .1-448-257-11	TRANSFORMER, POWER	

6. ELECTRICAL

NOTE:
Items marked with a critical symbol  are critical for safety. Replace only with part number specified.
If there is a set such as capacitors in circuits

Ref.No.	F
901	*1
902	*1
903	*1
904	*1
906	*1
907	*1
908	*1
909	*1
910	
911	
912	
913	
914	*1
915	*1
916	*1
917	*1
918	*1
920	
921	*
C101	
C102	
C103	
C104	
C105	
C106	
C107	
C108	
C109	
C151	
C152	
C153	
C154	
C155	
C156	
C157	
C201	
C202	
C203	
C204	
C205	
C206	
C207	
C208	

6. ELECTRICAL PARTS LIST

NOTE:

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μ F, PF: μ F.

RESISTORS
All resistors are in ohms.
F : nonflammable

COILS
MMH : mH, UH : μ H

SEMICONDUCTORS
In each case, U : μ , for example:
UA....: μ A..., UPA....: μ PA..., UPC....: μ PC,
UPD....: μ PD...

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*1-617-905-11	PC BOARD, MICROPHONE
902	*1-617-906-11	PC BOARD, SPECTRUM ANALIZER
903	*1-617-907-11	PC BOARD, HEADPHONE
904	*A-4375-253-A	MOUNTED PCB, GRAPHIC EQ
906	*1-615-440-11	PC BOARD, POWER
907	*1-535-116-00	TERMINAL
908	*1-535-115-00	TERMINAL
909	*A-4388-535-A	MOUNTED PCB, POWER AMP
910	Δ 1-551-472-00	(E).....CORD, POWER
	Δ 1-534-817-XX	(Saudi Arabia)...CORD, POWER EULO PLUG
911	1-557-896-11	CORD (WITH CONNECTOR)(5P)
912	1-557-897-11	CORD (WITH CONNECTOR)(13P)
913	1-536-705-21	TERMINAL BOARD (5P)
914	*1-617-904-11	PC BOARD, PHONO EQ
915	*1-615-442-11	PC BOARD, FUSE
916	*1-535-141-00	BASE POST 22MM (10MM PITCH) 4P
917	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
918	1-533-162-00	HOLDER, FUSE
920	Δ 1-526-565-00	(E).....AC PLUG ADAPTOR
	Δ 1-506-409-00	(Saudi Arabia)...ADAPTOR, CONVERSION
921	*1-617-909-11	PC BOARD, DOL
C101	1-123-612-00	ELECT 2.2MF 20% 50V
C102	1-162-288-31	CERAMIC 330PF 10% 50V
C103	1-123-647-00	ELECT 47MF 20% 6.3V
C104	1-130-480-00	MYLAR 0.0056MF 5% 50V
C105	1-130-473-00	MYLAR 0.0015MF 5% 50V
C106	1-123-612-00	ELECT 2.2MF 20% 50V
C107	1-162-282-31	CERAMIC 100PF 10% 50V
C108	1-123-617-00	ELECT 10MF 20% 16V
C109	1-123-617-00	ELECT 10MF 20% 16V
C151	1-123-612-00	ELECT 2.2MF 20% 50V
C152	1-162-288-31	CERAMIC 330PF 10% 50V
C153	1-123-647-00	ELECT 47MF 20% 6.3V
C154	1-130-480-00	MYLAR 0.0056MF 5% 50V
C155	1-130-473-00	MYLAR 0.0015MF 5% 50V
C156	1-123-612-00	ELECT 2.2MF 20% 50V
C157	1-162-282-31	CERAMIC 100PF 10% 50V
C201	1-123-612-00	ELECT 2.2MF 20% 50V
C202	1-162-215-31	CERAMIC 47PF 5% 50V
C203	1-123-611-00	ELECT 1MF 20% 50V
C204	1-136-159-00	MYLAR 0.033MF 10% 50V
C205	1-123-608-00	ELECT 0.22MF 20% 50V
C206	1-136-153-00	MYLAR 0.01MF 10% 50V
C207	1-136-164-00	MYLAR 0.082MF 10% 50V
C208	1-102-123-00	CERAMIC 0.0033MF 10% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C209	1-136-157-00	MYLAR 0.022MF 10% 50V
C210	1-162-294-31	CERAMIC 0.001MF 10% 50V
C211	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C212	1-162-288-31	CERAMIC 330PF 10% 50V
C213	1-123-612-00	ELECT 2.2MF 20% 50V
C214	1-162-294-31	CERAMIC 0.001MF 10% 50V
C215	1-123-612-00	ELECT 2.2MF 20% 50V
C216	1-123-332-00	ELECT 47MF 20% 16V
C217	1-123-612-00	ELECT 2.2MF 20% 50V
C218	1-162-294-31	CERAMIC 0.001MF 10% 50V
C219	1-123-612-00	ELECT 2.2MF 20% 50V
C221	1-136-165-00	FILM 0.1MF 5% 50V
C222	1-123-647-00	ELECT 47MF 20% 6.3V
C251	1-123-612-00	ELECT 2.2MF 20% 50V
C252	1-162-215-31	CERAMIC 47PF 5% 50V
C253	1-123-611-00	ELECT 1MF 20% 50V
C254	1-136-159-00	MYLAR 0.033MF 10% 50V
C255	1-123-608-00	ELECT 0.22MF 20% 50V
C256	1-136-153-00	MYLAR 0.01MF 10% 50V
C257	1-136-164-00	MYLAR 0.082MF 10% 50V
C258	1-102-123-00	CERAMIC 0.0033MF 10% 50V
C259	1-136-157-00	MYLAR 0.022MF 10% 50V
C260	1-162-294-31	CERAMIC 0.001MF 10% 50V
C261	1-102-127-21	CERAMIC 0.0068MF 10% 50V
C262	1-162-288-31	CERAMIC 330PF 10% 50V
C263	1-123-612-00	ELECT 2.2MF 20% 50V
C264	1-162-294-31	CERAMIC 0.001MF 10% 50V
C271	1-136-165-00	FILM 0.1MF 5% 50V
C301	1-130-497-00	MYLAR 0.15MF 10% 50V
C302	1-136-159-00	MYLAR 0.033MF 10% 50V
C303	1-136-161-00	MYLAR 0.047MF 10% 50V
C304	1-130-029-00	MYLAR 0.0082MF 10% 50V
C305	1-162-306-31	CERAMIC 0.01MF 30% 16V
C306	1-162-302-31	CERAMIC 0.0022MF 20% 16V
C307	1-162-303-31	CERAMIC 0.0033MF 20% 16V
C308	1-162-292-31	CERAMIC 680PF 10% 50V
C310	1-162-284-31	CERAMIC 150PF 10% 50V
C311	1-123-616-00	ELECT 4.7MF 20% 25V
C312	1-123-616-00	ELECT 4.7MF 20% 25V
C313	1-123-616-00	ELECT 4.7MF 20% 25V
C314	1-123-616-00	ELECT 4.7MF 20% 25V
C315	1-123-616-00	ELECT 4.7MF 20% 25V
C316	1-123-608-00	ELECT 0.22MF 20% 50V
C317	Δ 1-123-616-00	ELECT 4.7MF 20% 25V
C601	1-162-286-31	CERAMIC 220PF 10% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C602	1-136-165-00	FILM 0.1MF 5% 50V
C603	1-162-294-31	CERAMIC 0.001MF 10% 50V
C604	1-123-357-00	ELECT 22MF 20% 50V
C605	1-123-359-00	ELECT 47MF 20% 50V
C606	1-162-282-31	CERAMIC 100PF 10% 50V
C607	1-123-380-00	ELECT 1MF 20% 50V
C611	1-136-165-00	FILM 0.1MF 5% 50V
C632	Δ 1-123-360-00	ELECT 100MF 20% 50V
C633	1-123-356-00	ELECT 10MF 20% 50V
C651	1-162-286-31	CERAMIC 220PF 10% 50V
C652	1-136-165-00	FILM 0.1MF 5% 50V
C653	1-162-294-31	CERAMIC 0.001MF 10% 50V
C654	1-123-357-00	ELECT 22MF 20% 50V
C655	1-123-359-00	ELECT 47MF 20% 50V
C656	1-162-282-31	CERAMIC 100PF 10% 50V
C657	1-123-380-00	ELECT 1MF 20% 50V
C661	1-136-165-00	FILM 0.1MF 5% 50V
C672	1-123-308-00	ELECT 220MF 20% 10V
C673	1-162-306-31	CERAMIC 0.01MF 30% 16V
C674	1-123-308-00	ELECT 220MF 20% 10V
C675	1-136-157-00	FILM 0.022MF 5% 50V
C677	1-123-332-00	ELECT 47MF 20% 25V
C901	Δ 1-124-362-00	ELECT 4700MF 20% 42V
C902	Δ 1-124-362-00	ELECT 4700MF 20% 42V
C903	Δ 1-123-338-00	ELECT 2200MF 20% 25V
C905	Δ 1-123-369-00	ELECT 4.7MF 20% 50V
C910	1-123-356-00	ELECT 10MF 20% 25V
C915	1-123-356-00	ELECT 10MF 20% 25V
C930	Δ 1-102-394-00	CERAMIC 0.01MF 250V
C931	Δ 1-102-394-00	CERAMIC 0.01MF 250V
C932	Δ 1-161-744-00	CERAMIC 0.01MF 400V
CN201	*1-564-112-21	PIN, CONNECTOR 3P
CN202	*1-564-114-11	PIN, CONNECTOR 5P
CN203	*1-564-115-00	PIN, CONNECTOR 6P
CN204	*1-564-111-00	PIN, CONNECTOR 2P
CN205	*1-560-077-00	PIN, CONNECTOR
CN206	*1-564-496-11	PIN, CONNECTOR 3P
CN207	*1-564-111-00	PIN, CONNECTOR 2P
CN301	*1-564-111-00	PIN, CONNECTOR 2P
CN601	*1-560-070-00	BASE POST 5P
CN603	*1-560-070-00	BASE POST 5P
CN901	*1-560-708-00	PIN, CONNECTOR 2P
CN902	*1-560-602-00	PIN, CONNECTOR 3P
CN903	*1-560-604-00	PIN, CONNECTOR 5P
D201	8-719-301-43	DIODE SEL2410E-C
D202	8-719-301-43	DIODE SEL2410E-C
D203	8-719-301-43	DIODE SEL2410E-C

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D204	8-719-301-43	DIODE SEL2410E-C
D205	8-719-301-43	DIODE SEL2410E-C
D206	8-719-300-95	DIODE SEL2710K
D207	8-719-300-95	DIODE SEL2710K
D208	8-719-300-95	DIODE SEL2710K
D209	8-719-300-95	DIODE SEL2710K
D210	8-719-300-95	DIODE SEL2710K
D211	8-719-301-60	DIODE SEL2910A-C
D212	8-719-301-60	DIODE SEL2910A-C
D213	8-719-301-60	DIODE SEL2910A-C
D214	8-719-301-60	DIODE SEL2910A-C
D215	8-719-301-60	DIODE SEL2910A-C
D216	8-719-301-38	DIODE SEL2810A-C
D217	8-719-301-38	DIODE SEL2810A-C
D218	8-719-301-38	DIODE SEL2810A-C
D219	8-719-301-38	DIODE SEL2810A-C
D220	8-719-301-38	DIODE SEL2810A-C
D221	8-719-301-52	DIODE SEL2210S-C
D222	8-719-301-52	DIODE SEL2210S-C
D223	8-719-301-52	DIODE SEL2210S-C
D224	8-719-301-52	DIODE SEL2210S-C
D225	8-719-301-52	DIODE SEL2210S-C
D241	8-719-301-38	DIODE SEL2810A-C
D242	8-719-301-38	DIODE SEL2810A-C
D243	8-719-301-38	DIODE SEL2810A-C
D244	8-719-301-38	DIODE SEL2810A-C
D245	8-719-403-98	DIODE LN450YP
D671	8-719-107-94	DIODE 1SS202-1
D901	Δ 8-719-300-67	DIODE RB602F
D902	Δ 8-719-300-57	DIODE RB402
D904	Δ 8-719-107-94	DIODE 1SS202-1
D910	Δ 8-719-910-12	DIODE HZ11A2L
D915	Δ 8-719-910-12	DIODE HZ11A2L
DIP101	*1-562-249-00	SOCKET, CONNECTOR 4P
DIP102	*1-562-250-00	SOCKET, CONNECTOR 5P
DIP902	*1-562-327-00	SOCKET, CONNECTOR 3P
DIP903	*1-562-250-00	SOCKET, CONNECTOR 5P
F901	Δ 1-532-285-00	FUSE, TIME-LAG
F902	Δ 1-532-285-00	FUSE, TIME-LAG
IC101	8-759-600-02	IC M5218L
IC201	1-806-285-11	IC TA75558P
IC202	8-759-602-04	IC M5226P


The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC203	8-759-602-04	IC M5226P
IC204	8-759-913-80	IC IR2E31
IC205	8-759-913-80	IC IR2E31
IC206	8-759-913-80	IC IR2E31
IC207	8-759-913-80	IC IR2E31
IC208	8-759-913-80	IC IR2E31
IC601A	8-749-941-52	IC STK4152II
IC671A	8-759-101-23	IC UPC1237H
J301	1-507-857-00	JACK, LARGE TYPE (MIC)
J501	1-507-849-00	JACK, LARGE TYPE (HEADPHONES)
P101	1-507-914-21	JACK, PIN 6P
Q201	8-729-606-33	TRANSISTOR 2SC2603F
Q202	8-729-606-33	TRANSISTOR 2SC2603F
Q203	8-729-606-33	TRANSISTOR 2SC2603F
Q252	8-729-606-33	TRANSISTOR 2SC2603F
Q253	8-729-606-33	TRANSISTOR 2SC2603F
Q301	8-729-606-33	TRANSISTOR 2SC2603F
Q601A	8-729-108-05	TRANSISTOR 2SC1841PA
Q651A	8-729-108-05	TRANSISTOR 2SC1841PA
Q671	8-729-117-54	TRANSISTOR 2SA1175
Q910A	8-729-107-25	TRANSISTOR 2SD1585-L
Q911A	8-729-606-33	TRANSISTOR 2SC2603F
Q915A	8-729-103-48	TRANSISTOR 2SB1038
Q916	8-729-117-54	TRANSISTOR 2SA1175
R101	1-247-873-00	CARBON 56K 5% 1/6W
R102	1-247-833-00	CARBON 1.2K 5% 1/6W
R103	1-247-897-00	CARBON 560K 5% 1/6W
R104	1-247-833-00	CARBON 1.2K 5% 1/6W
R105	1-247-897-00	CARBON 560K 5% 1/6W
R106	1-249-437-11	CARBON 47K 5% 1/6W
R107	1-249-435-11	CARBON 33K 5% 1/6W
R108	1-249-425-11	CARBON 4.7K 5% 1/6W
R109	1-249-429-11	CARBON 10K 5% 1/6W
R151	1-247-873-00	CARBON 56K 5% 1/6W
R152	1-247-833-00	CARBON 1.2K 5% 1/6W
R153	1-247-897-00	CARBON 560K 5% 1/6W
R154	1-247-833-00	CARBON 1.2K 5% 1/6W
R155	1-247-897-00	CARBON 560K 5% 1/6W
R156	1-249-437-11	CARBON 47K 5% 1/6W
R157	1-249-435-11	CARBON 33K 5% 1/6W
R158	1-249-425-11	CARBON 4.7K 5% 1/6W
R159	1-249-429-11	CARBON 10K 5% 1/6W
R201	1-249-433-11	CARBON 22K 5% 1/6W
R202	1-247-859-00	CARBON 15K 5% 1/6W
R203	1-249-437-11	CARBON 47K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R204	1-249-429-11	CARBON 10K 5% 1/6W
R205	1-249-437-11	CARBON 47K 5% 1/6W
R206	1-249-441-11	CARBON 100K 5% 1/6W
R207	1-249-425-11	CARBON 4.7K 5% 1/6W
R208	1-249-417-11	CARBON 1K 5% 1/6W
R209	1-249-433-11	CARBON 22K 5% 1/6W
R210	1-249-433-11	CARBON 22K 5% 1/6W
R211	1-249-422-11	CARBON 2.7K 5% 1/6W
R212	1-249-417-11	CARBON 1K 5% 1/6W
R213	1-249-437-11	CARBON 47K 5% 1/6W
R214	1-249-433-11	CARBON 22K 5% 1/6W
R215	1-249-417-11	CARBON 1K 5% 1/6W
R216	1-249-422-11	CARBON 2.7K 5% 1/6W
R217	1-249-429-11	CARBON 10K 5% 1/6W
R218	1-249-437-11	CARBON 47K 5% 1/6W
R219	1-249-429-11	CARBON 10K 5% 1/6W
R220	1-249-429-11	CARBON 10K 5% 1/6W
R221	1-247-838-00	CARBON 2K 5% 1/6W
R222	1-249-441-11	CARBON 100K 5% 1/6W
R223	1-247-849-00	CARBON 5.6K 5% 1/6W
R224	1-249-405-11	CARBON 100 5% 1/6W
R225	1-249-417-11	CARBON 1K 5% 1/6W
R226	1-247-843-00	CARBON 3.3K 5% 1/6W
R227	1-249-429-11	CARBON 10K 5% 1/6W
R228	1-249-429-11	CARBON 10K 5% 1/6W
R229	1-249-429-11	CARBON 10K 5% 1/6W
R230	1-249-429-11	CARBON 10K 5% 1/6W
R231	1-249-429-11	CARBON 10K 5% 1/6W
R232	1-247-823-00	CARBON 470 5% 1/6W
R251	1-249-433-11	CARBON 22K 5% 1/6W
R252	1-247-859-00	CARBON 15K 5% 1/6W
R253	1-249-437-11	CARBON 47K 5% 1/6W
R254	1-249-429-11	CARBON 10K 5% 1/6W
R255	1-249-437-11	CARBON 47K 5% 1/6W
R256	1-249-441-11	CARBON 100K 5% 1/6W
R257	1-249-425-11	CARBON 4.7K 5% 1/6W
R258	1-249-417-11	CARBON 1K 5% 1/6W
R259	1-249-433-11	CARBON 22K 5% 1/6W
R260	1-249-433-11	CARBON 22K 5% 1/6W
R271	1-247-838-00	CARBON 2K 5% 1/6W
R272	1-249-441-11	CARBON 100K 5% 1/6W
R273	1-247-849-00	CARBON 5.6K 5% 1/6W
R274	1-249-405-11	CARBON 100 5% 1/6W
R275	1-249-417-11	CARBON 1K 5% 1/6W
R276	1-247-843-00	CARBON 3.3K 5% 1/6W

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R277	1-249-429-11	CARBON	10K	5%	1/6W
R278	1-249-429-11	CARBON	10K	5%	1/6W
R301	1-249-429-11	CARBON	10K	5%	1/6W
R302	1-249-429-11	CARBON	10K	5%	1/6W
R303	1-249-441-11	CARBON	100K	5%	1/6W
R304	1-249-429-11	CARBON	10K	5%	1/6W
R305	1-249-441-11	CARBON	100K	5%	1/6W
R306	1-249-429-11	CARBON	10K	5%	1/6W
R307	1-249-441-11	CARBON	100K	5%	1/6W
R308	1-249-429-11	CARBON	10K	5%	1/6W
R309	1-249-441-11	CARBON	100K	5%	1/6W
R310	1-249-429-11	CARBON	10K	5%	1/6W
R311	1-249-441-11	CARBON	100K	5%	1/6W
R312	1-247-704-11	CARBON	220	5%	1/4W
R313	1-247-704-11	CARBON	220	5%	1/4W
R314	1-247-704-11	CARBON	220	5%	1/4W
R315	1-247-704-11	CARBON	220	5%	1/4W
R316	1-247-704-11	CARBON	220	5%	1/4W
R317	1-247-704-11	CARBON	220	5%	1/4W
R501	1-247-711-11	CARBON	680	5%	1/4W
R551	1-247-711-11	CARBON	680	5%	1/4W
R601	1-249-441-11	CARBON	100K	5%	1/6W
R602	1-249-421-11	CARBON	2.2K	5%	1/6W
R603	1-247-823-00	CARBON	470	5%	1/6W
R604	1-249-441-11	CARBON	100K	5%	1/6W
R605	1-247-717-11	CARBON	2.2K	5%	1/4W
R606	1-247-717-11	CARBON	2.2K	5%	1/4W
R607	1-217-151-00	RES, METAL PLATE 0.22			
R608	1-249-414-11	CARBON	560	5%	1/6W
R609	1-249-414-11	CARBON	560	5%	1/6W
R611	1-247-192-00	CARBON	10	5%	1/2W F
R631	1-217-399-00	FUSIBLE	100	5%	1/4W F
R632	1-247-240-00	CARBON	1K	5%	1/2W F
R633	1-247-240-00	CARBON	1K	5%	1/2W F
R634	1-212-883-00	FUSIBLE	120	5%	1/4W F
R635	1-217-399-00	FUSIBLE	100	5%	1/4W F
R651	1-249-441-11	CARBON	100K	5%	1/6W
R652	1-249-421-11	CARBON	2.2K	5%	1/6W
R653	1-247-823-00	CARBON	470	5%	1/6W
R654	1-249-441-11	CARBON	100K	5%	1/6W
R655	1-247-717-11	CARBON	2.2K	5%	1/4W
R656	1-247-717-11	CARBON	2.2K	5%	1/4W
R657	1-217-151-00	RES, METAL PLATE 0.22			
R658	1-249-414-11	CARBON	560	5%	1/6W
R659	1-249-414-11	CARBON	560	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R661	1-247-192-00	CARBON	10	5%	1/2W F
R671	1-249-433-11	CARBON	22K	5%	1/6W
R672	1-249-429-11	CARBON	10K	5%	1/6W
R673	1-249-433-11	CARBON	22K	5%	1/6W
R674	1-249-433-11	CARBON	22K	5%	1/6W
R675	1-247-881-00	CARBON	120K	5%	1/6W
R676	1-247-881-00	CARBON	120K	5%	1/6W
R677	1-249-441-11	CARBON	100K	5%	1/6W
R678	1-247-220-00	CARBON	150	5%	1/2W F
R679	1-249-429-11	CARBON	10K	5%	1/6W
R680	1-247-873-00	CARBON	56K	5%	1/6W
R904	1-247-849-00	CARBON	5.6K	5%	1/6W
R905	1-217-481-00	FUSIBLE	10	5%	1W F
R906	1-217-485-00	FUSIBLE	22	5%	1W F
R910	1-213-135-11	METAL OXIDE	220	5%	1W F
R911	1-249-425-11	CARBON	4.7K	5%	1/6W
R912	1-249-429-11	CARBON	10K	5%	1/6W
R915	1-213-135-11	METAL OXIDE	220	5%	1W F
R916	1-249-425-11	CARBON	4.7K	5%	1/6W
R917	1-249-429-11	CARBON	10K	5%	1/6W
R920	1-247-180-00	CARBON	1	5%	1/2W F
R921	1-247-180-00	CARBON	1	5%	1/2W F
RV201	1-230-362-11	RES, VAR, SLIDE 250K/250K (100Hz)			
RV202	1-230-362-11	RES, VAR, SLIDE 250K/250K (400Hz)			
RV203	1-230-362-11	RES, VAR, SLIDE 250K/250K (1kHz)			
RV204	1-230-362-11	RES, VAR, SLIDE 250K/250K (4kHz)			
RV205	1-230-362-11	RES, VAR, SLIDE 250K/250K (12kHz)			
RV206	1-230-360-11	RES, VAR, SLIDE 100K (BALANCE)			
RV207	1-230-361-11	RES, VAR, SLIDE 50K (MIC LEVEL)			
RV208	1-230-793-11	RES, VAR, SLIDE 50K/50K (VOLUME)			
RY601	1-515-503-00	RELAY			
S1	1-553-318-51	SWITCH, PUSH (1 KEY)(POWER)			
S2	1-526-576-51	SELECTOR, POWER VOLTAGE			
S3	1-570-205-11	SWITCH, PUSH (4 KEY)(FUNCTION)			
S4	1-554-419-00	SWITCH, PUSH (1 KEY)(DOL)			
T1	1-448-257-11	TRANSFORMER, POWER			

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

FH-110WX/110W/100W
TC-157W/157WX

STEREO CASSETTE DECK

(TC-157W/157WX)

Tape Transport Mechanism Type	TCM-CMAY A2 (DECK A)
	TCM-CMAY B3 (DECK B)

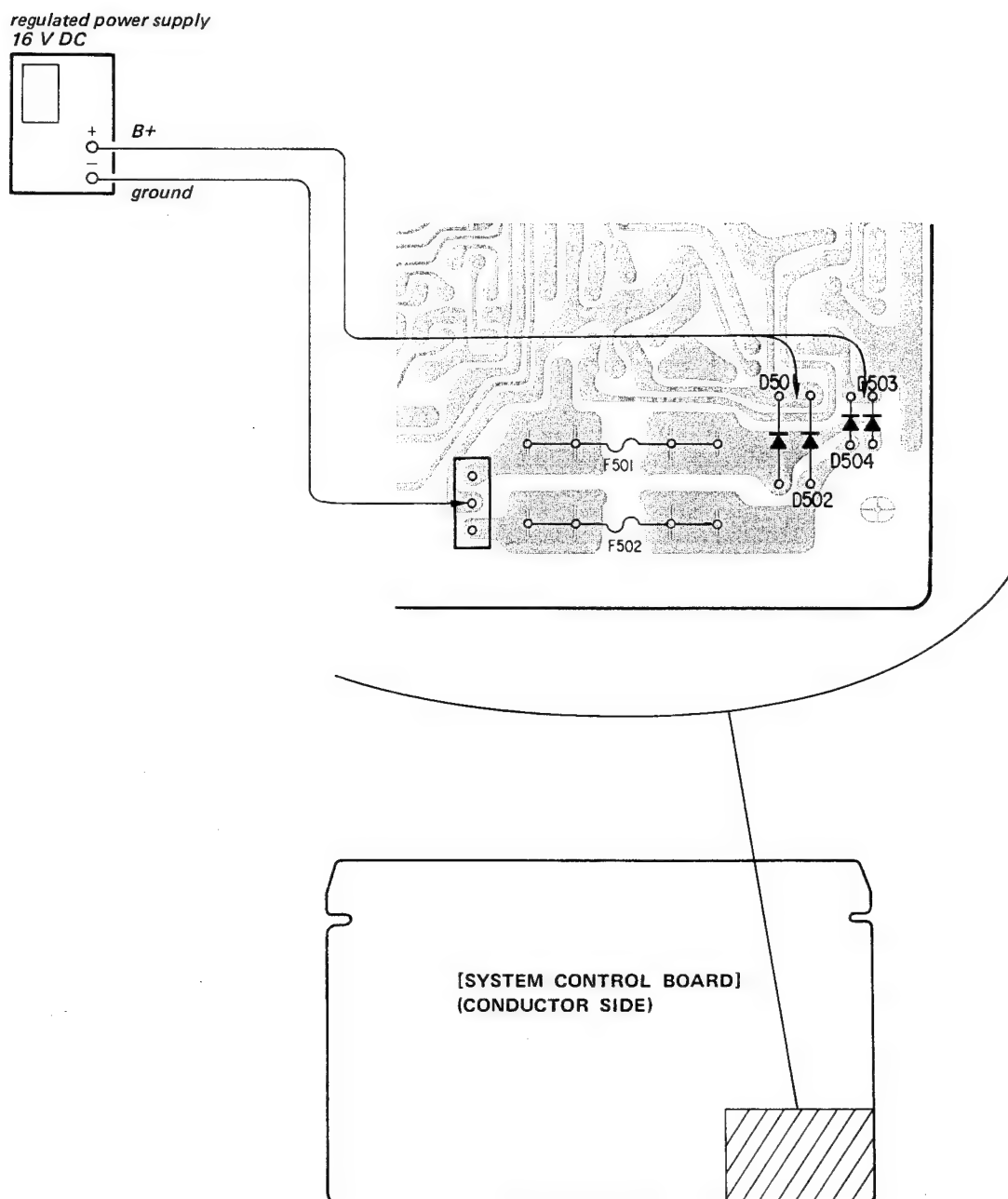
FH-110WX/110W/100W TC-157W/157WX

REPAIRING PRECAUTION

[To apply B+ voltage]

The power of this unit is fed from amplifier.

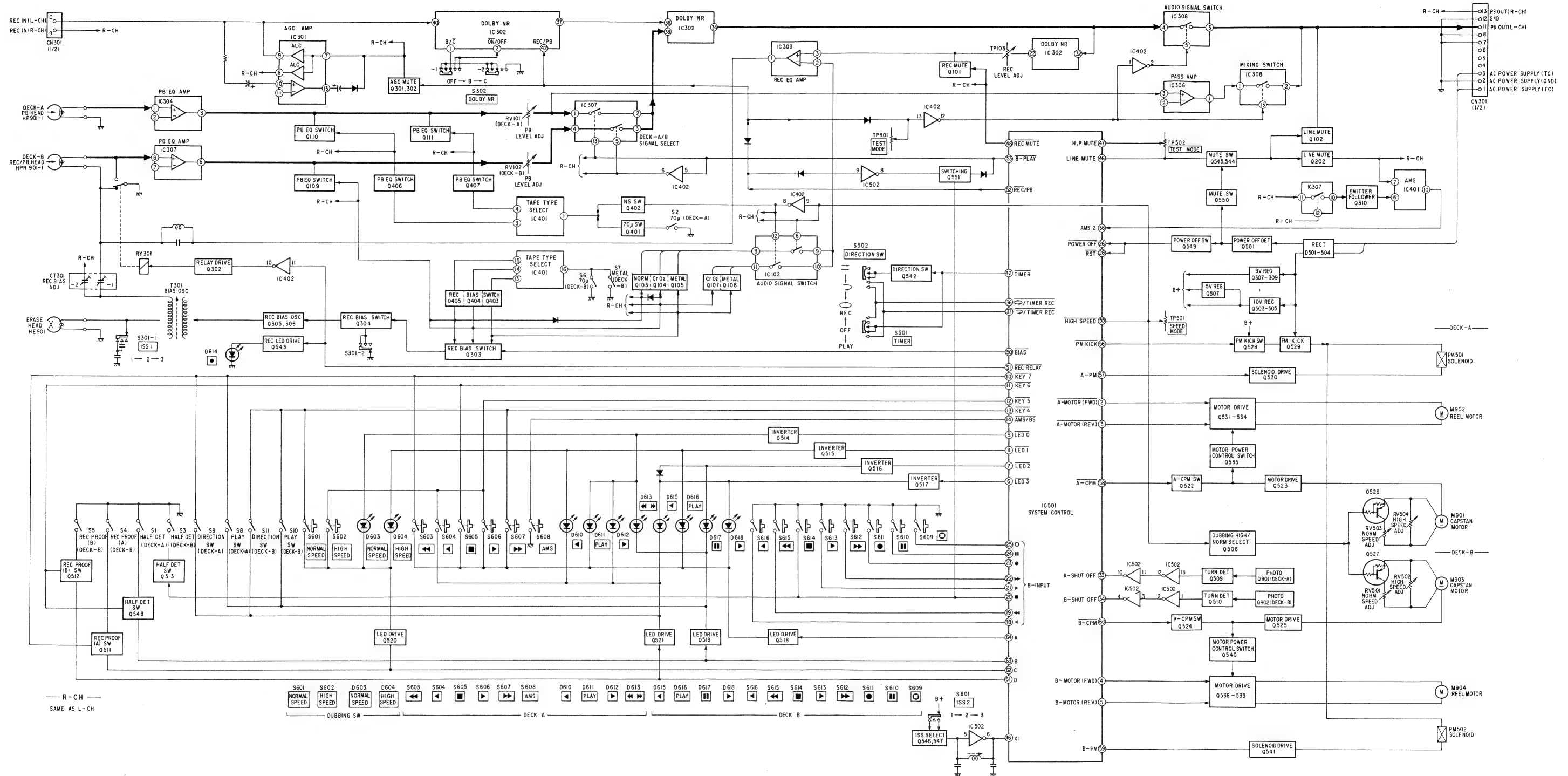
Because of this, connect the regulated power supply as illustrated below when this unit alone operates.



SECTION 1
BLOCK DIAGRAM

FH-110WX/110W/100W
TC-157W/157WX

FH-110WX/110W/100W
TC-157W/157WX



SECTION 2 DISASSEMBLY

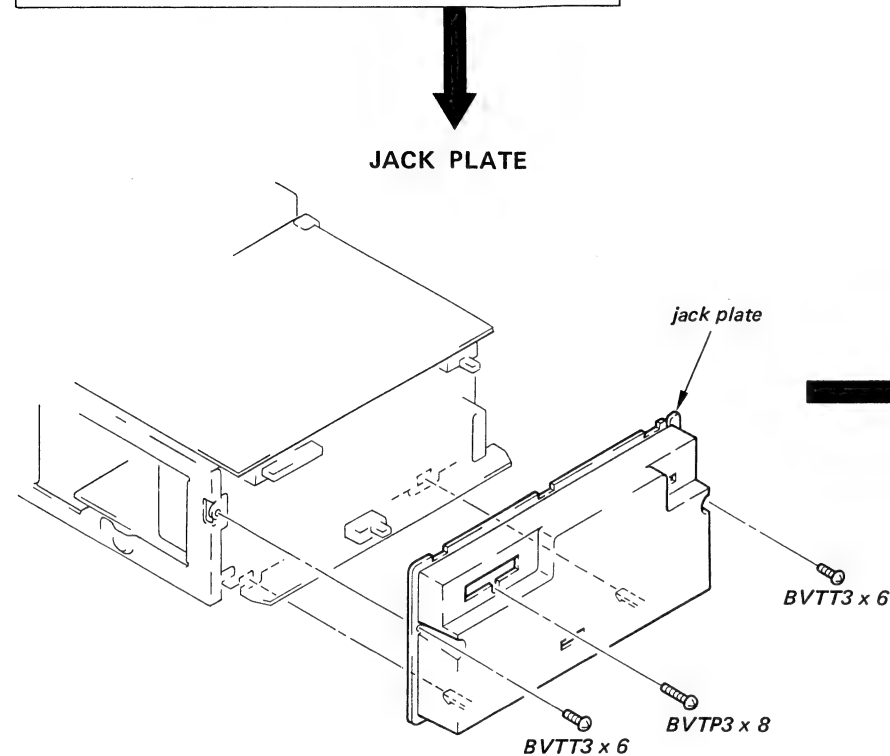
**FH-110WX/110W/100W
TC-157W/157WX**

**FH-110WX/110W/100W
TC-157W/157WX**

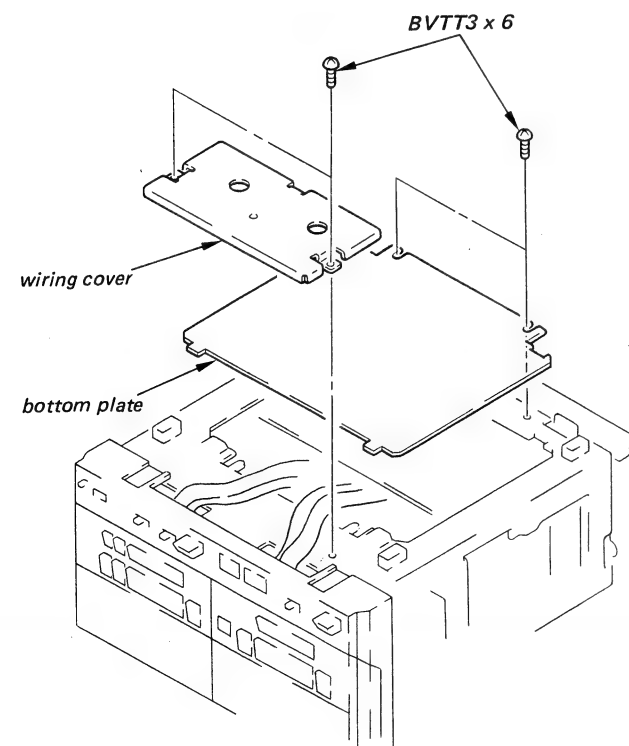
Note: Follow the disassembly procedure in the numerical order given.

CASE REMOVAL

Remove case by taking out four screws securing case.



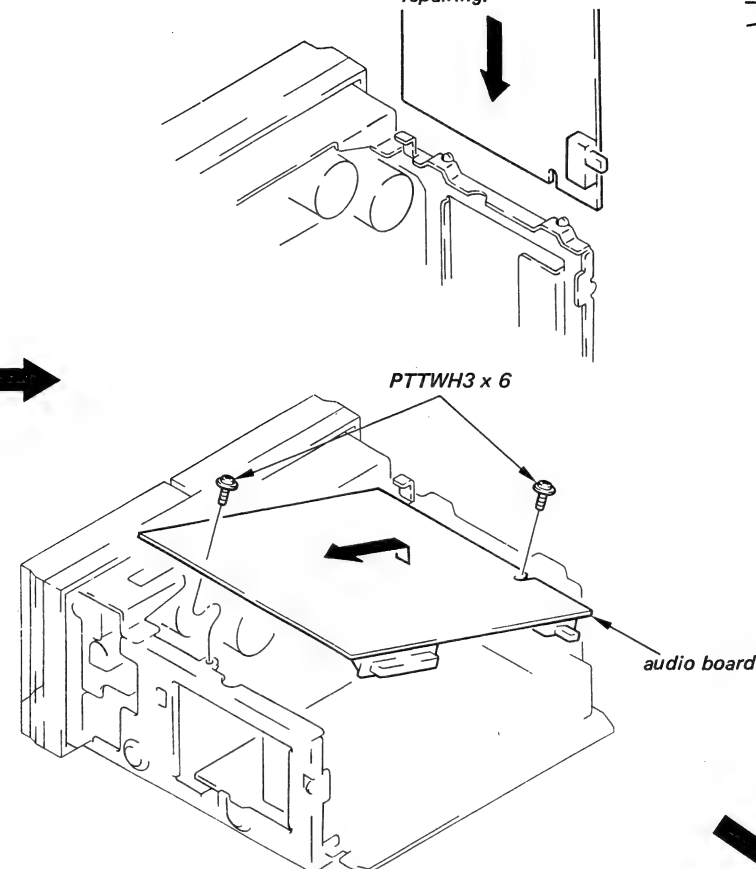
BOTTOM PLATE



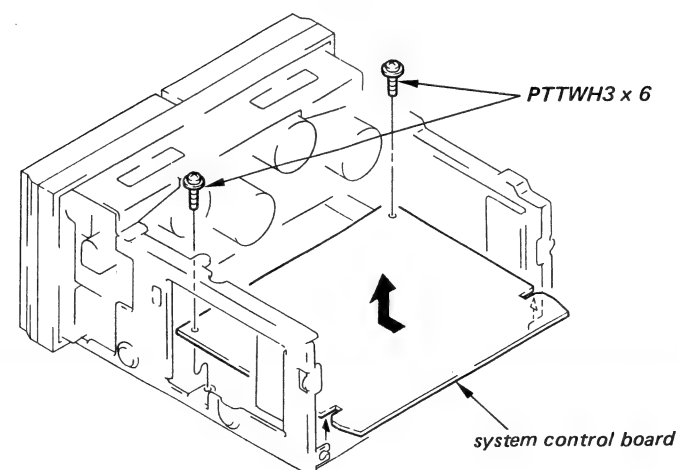
— TC-5 —

AUDIO BOARD

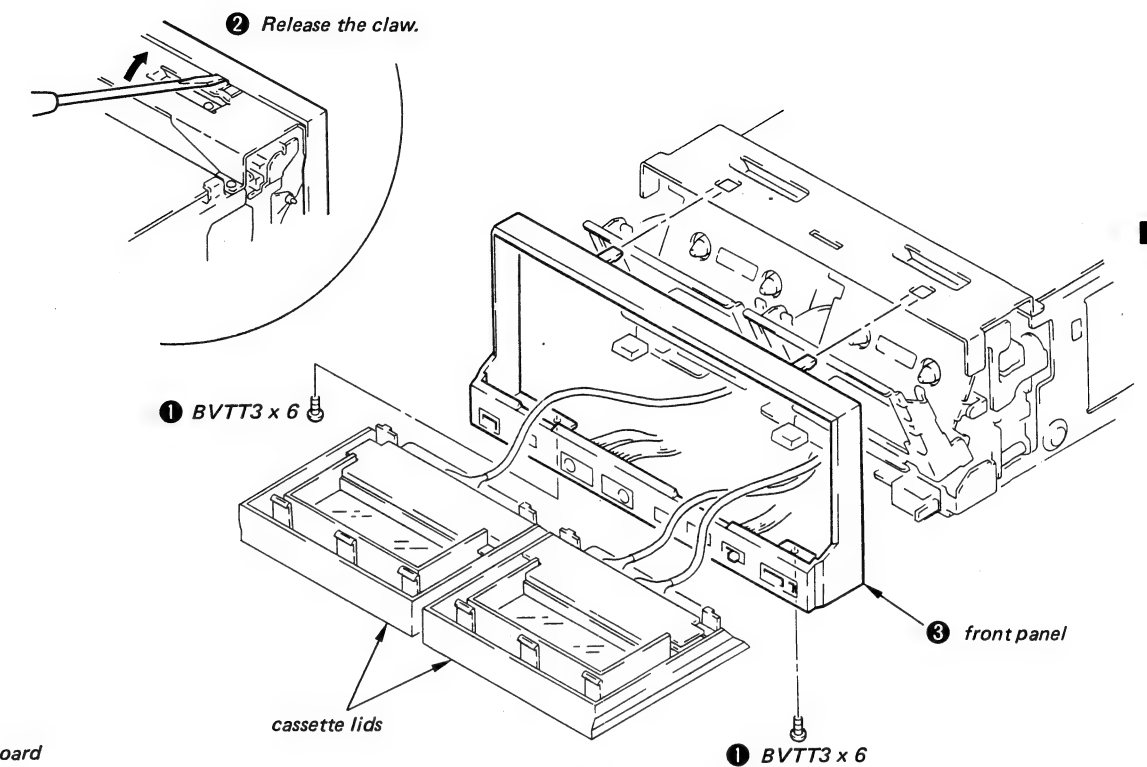
Note on repairing:
Raise up PC board as
illustrated for easy
repairing.



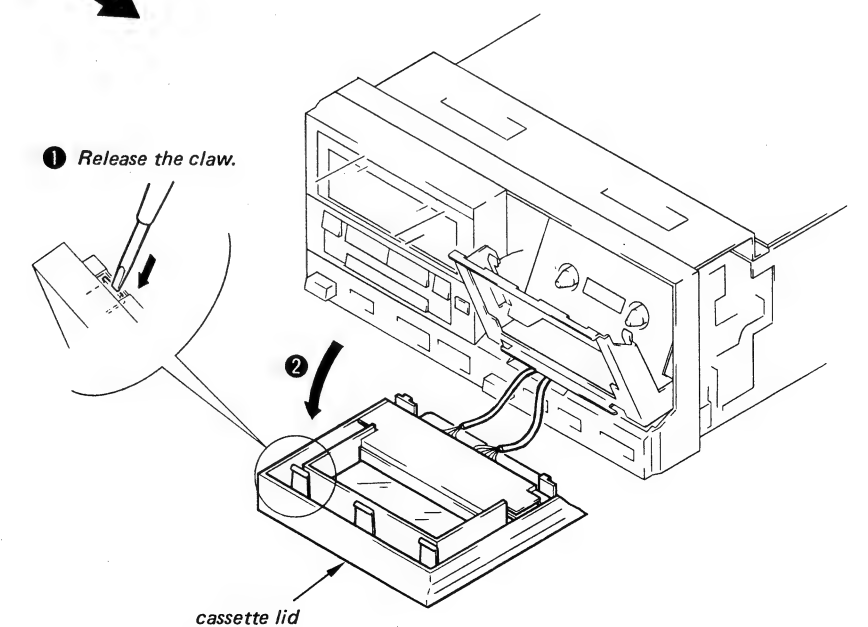
SYSTEM CONTROL BOARD



FRONT PANEL



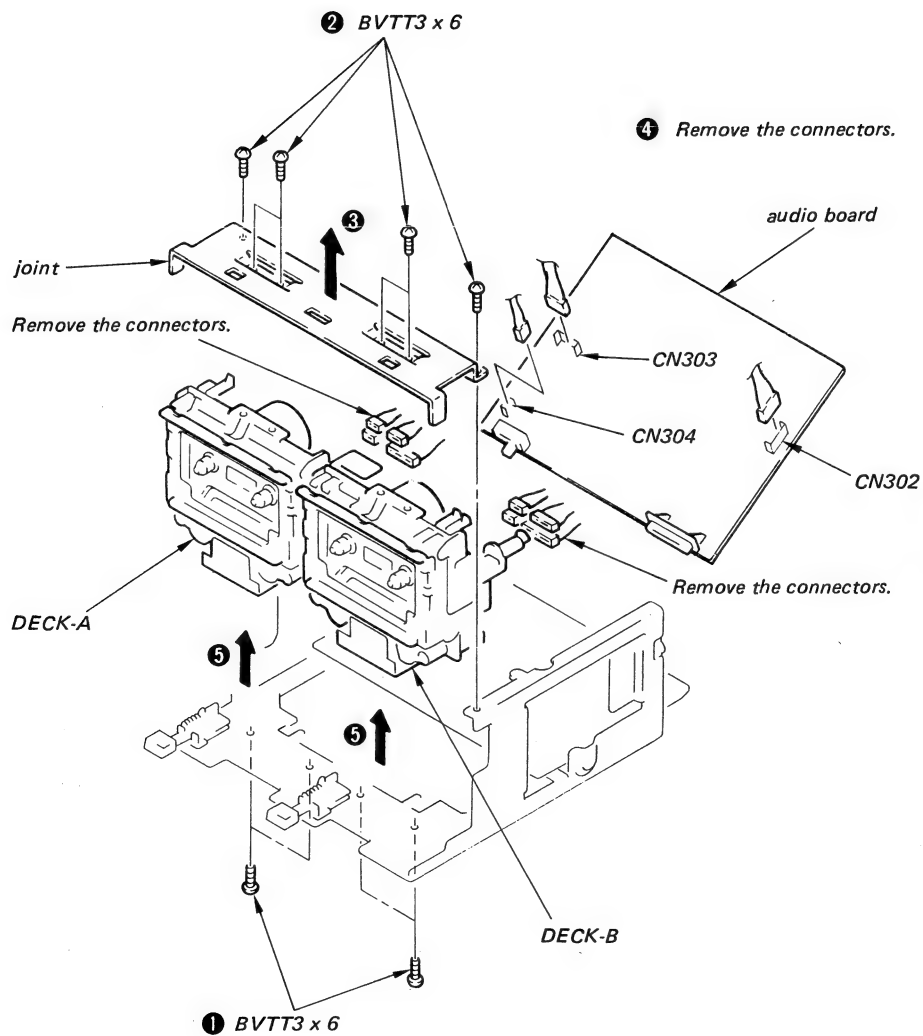
CASSETTE LID



— TC-6 —

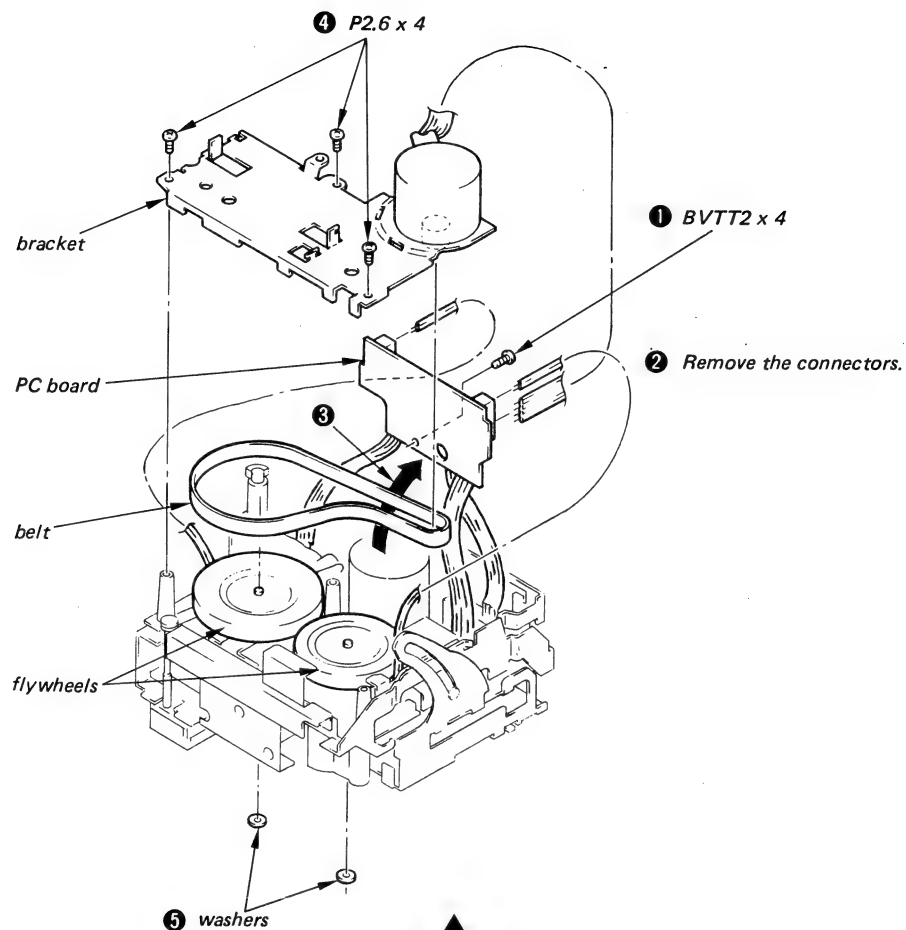


DECK-A, B



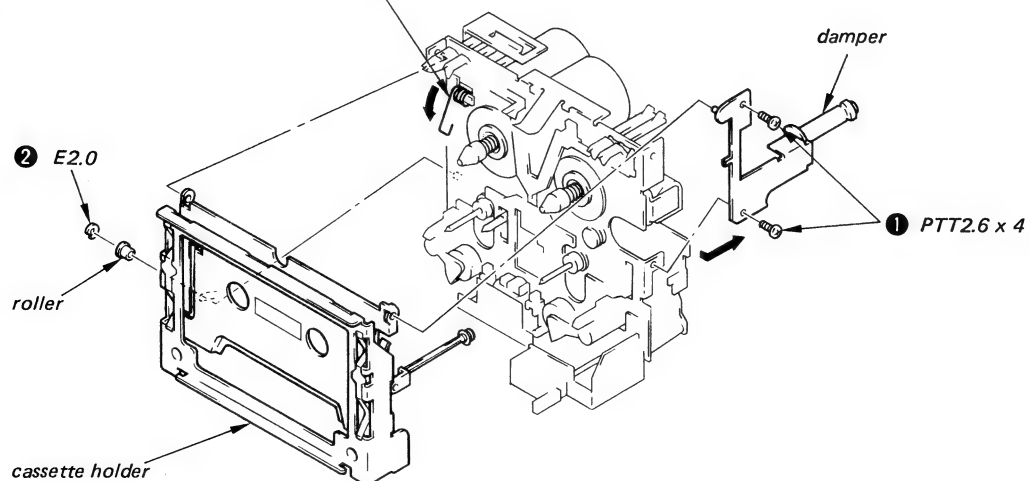
FH-110WX/110W/100W TC-157W/157WX

FLYWHEEL, BELT



CASSETTE HOLDER

Note: When installing, set the spring in the position of arrow.



SECTION 3
ADJUSTMENTS

FH-110WX/110W/100W
TC-157W/157WX

FH-110WX/110W/100W
TC-157W/157WX

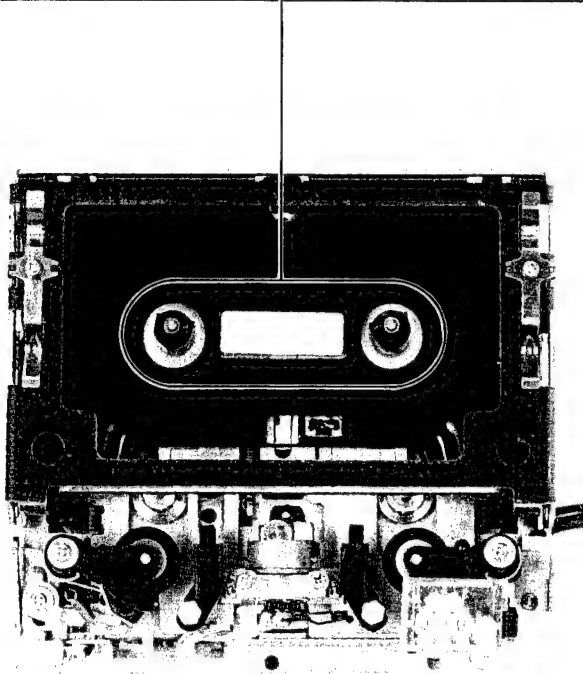
3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:
record/playback/erase head rubber belts
capstan
pinch roller
- Demagnetize the head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
Forward and Reverse	CQ-102C	30 – 70 g·cm (0.42 – 0.97 oz·inch)
Fast Forward and Rewind	CQ-201B	90 – 160 g·cm (1.25 – 2.22 oz·inch)
Forward BT and Reverse BT	CQ102RB	2 – 6 g·cm (0.03 – 0.08 oz·inch)

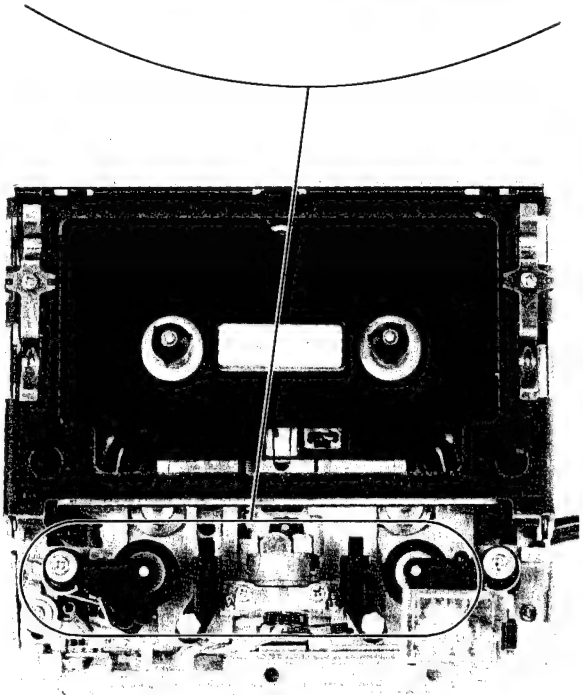
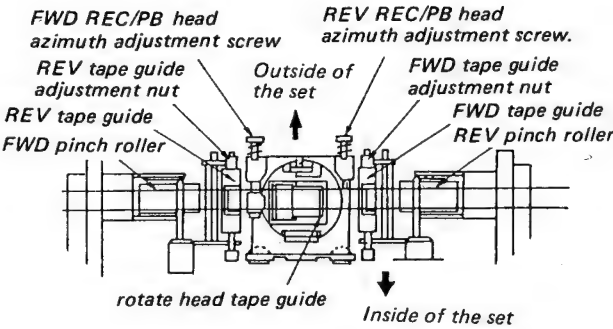


Tape Path Adjustment

Procedure:

- Insert the mirror cassette (CQ-009 or CQ-012C).
- Mode: FWD
Adjust FWD tape guide nuts and adjustment shims for no tape curl.
- Mode: REV
Adjust REV tape guide nuts and adjustment shims for no tape curl.
- After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location:

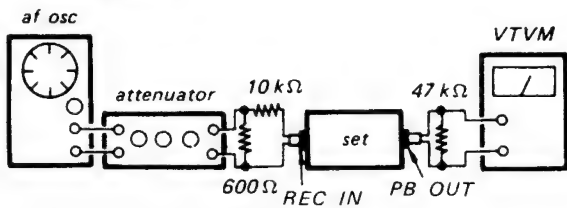


3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
DOLBY NR switch: OFF
TIMER switch: OFF
ISS switch: 2
- Standard Record:
Deliver the standard input signal level to the input jack and control the attenuator to obtain the standard output signal level.

– Record Mode –



Standard Input Level

	REC IN
source impedance	10 kΩ
input level	0.25 V (–10 dB)

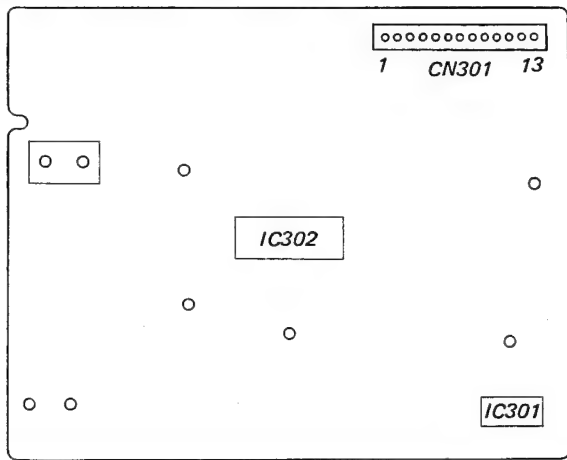
Standard Output Level

	PB OUT
load impedance	47 kΩ
output level	0.44 V (–5 dB)

Locations of REC IN and PB OUT

	CN301 terminal No.		
	L-CH	R-CH	GND
REC IN	10	9	12
PB OUT	11	13	12

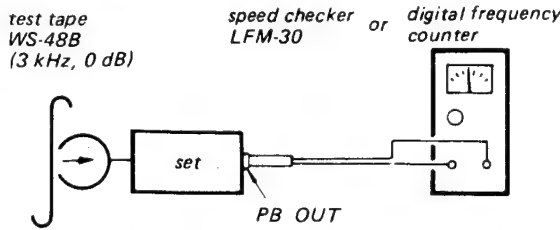
[AUDIO BOARD] – Conductor Side –



Tape Speed Adjustment

Procedure:

See the left for locations of REC IN and PB OUT.
Mode: forward-playback



- Put TP501 into TEST MODE. Adjust high speed pushing the dubbing (High) button from FWD MODE.

Specification: high speed

Speed checker	Digital frequency counter
–0.66 to +0.66%	6000 ±40 Hz

Frequency difference between DECK-A and DECK-B at the beginning of the tape should be within 1.5% (90 Hz).

Adjustment Location:

DECK-A side RV504
DECK-B side RV502

- Put TP501 into NORMAL MODE.

Specification: normal speed

Speed checker	Digital frequency counter
–0.66 to +0.66%	3000 ±20 Hz

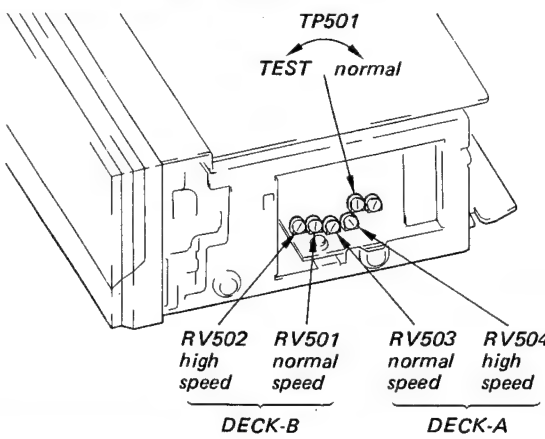
Frequency difference between DECK-A and DECK-B at the beginning of the tape should be within 1.5% (45 Hz).

Adjustment Location:

DECK-A side RV503
DECK-B side RV501

- If the specifications are not satisfied, repeat step 1 and 2.

Adjustment Location: system control board



Record

Proced

See

OU

1. Mod

test tap

P-4-A10

(10 kHz)

1. Turn

put

adju

mate

2. Turn

put

adju

mate

L-CH

peak

3. Pha

test ta

P-4-A1

(10 kHz)

4. After

com

Adjust

5. After

com

Adjust

6. After

com

Adjust

7. After

com

Adjust

8. After

com

Adjust

9. After

com

Adjust

10. After

com

Adjust

11. After

com

Adjust

12. After

com

Adjust

13. After

com

Adjust

14. After

com

Adjust

15. After

com

Adjust

16. After

com

Adjust

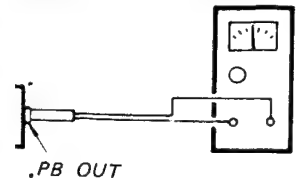
17. After

com

Adjust

itions of REC IN and PB OUT.
back

speed checker or digital frequency
LFM-30 counter



ST MODE. Adjust high speed
g (High) button from FWD

ad

Digital frequency counter
6000 ±40 Hz

ce between DECK-A and
inning of the tape should be

ORMAL MODE.

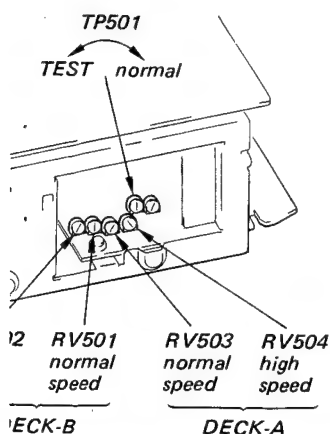
eed

Digital frequency counter
3000 ±20 Hz

ce between DECK-A and
inning of the tape should be

are not satisfied, repeat step 1

ystem control board



DECK-B DECK-A

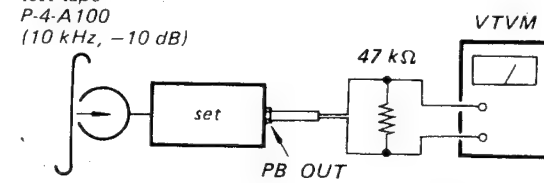
Record/playback Head Azimuth Adjustment

Procedure:

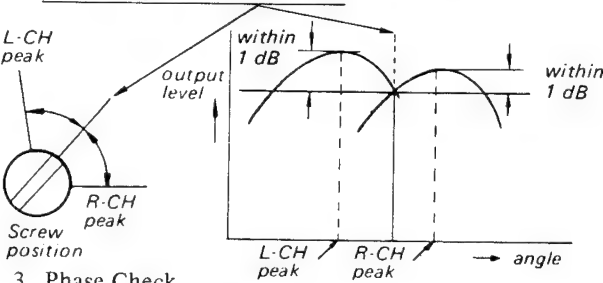
See page TC-10 for locations of REC IN and PB OUT.

1. Mode: forward-playback

test tape
P-4-A100
(10 kHz, -10 dB)

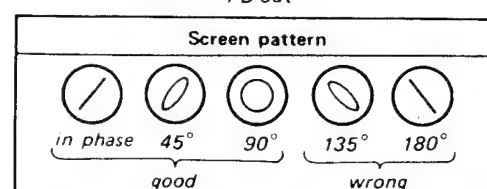
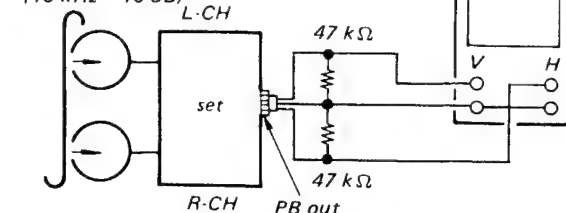


2. Turn the adjustment screw for the maximum out-
put levels. If these levels do not match, turn the
adjustment screws until both of output levels
match together within 1 dB.



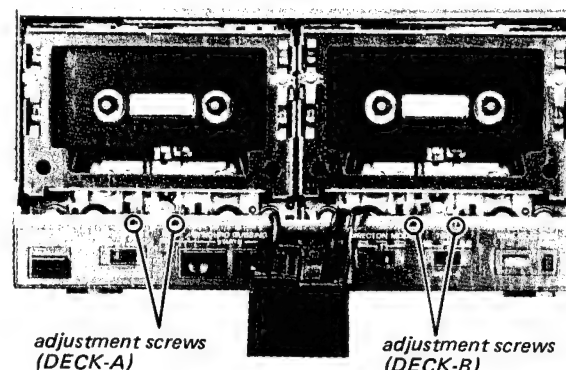
3. Phase Check

test tape
P-4-A100
(10 kHz -10 dB)



4. After the adjustment, lock the screws with locking
compound.

Adjustment Location:



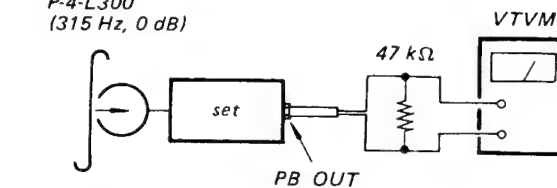
Playback Level Adjustment

Procedure:

See page TC-10 for locations of REC IN and PB OUT.

Mode: playback

test tape
P-4-L300
(315 Hz, 0 dB)



Adjust,

DECK-A side RV101 (L-CH), RV201 (R-CH)

DECK-B side RV102 (L-CH), RV202 (R-CH)

so that the specifications are satisfied.

Specification:

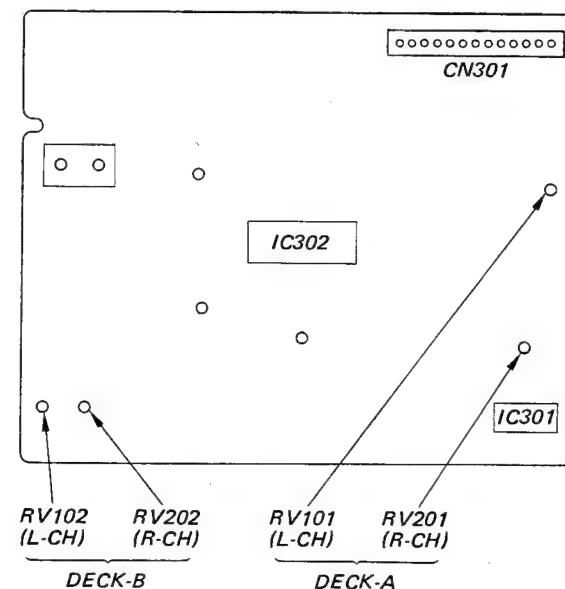
PB OUT level: 0.41 to 0.46 V (-5.5 to -4.5 dB)

Level difference between channels: less than 0.5 dB

Check that the PB OUT level does not change in
playback mode while changing the mode from
playback to stop several times.

Adjustment Location: audio board

[AUDIO BOARD] - Conductor Side -



Record Bias Adjustment

Setting:

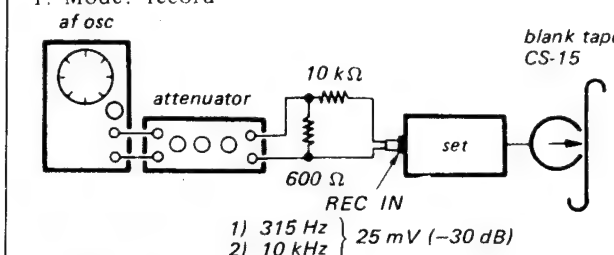
- ATTENUATOR: standard record
(See page TC-10.)

- Put TP301, 502 into TEST MODE.

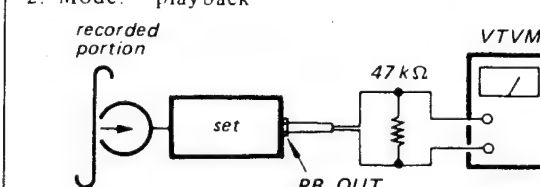
Procedure:

See page TC-16 for locations of REC IN and PB OUT.

1. Mode: record



2. Mode: playback



Confirm that the 10 kHz playback output is 0
±0.5 dB relative to the 315 Hz output. If neces-
sary, adjust CT301-1 (L-CH), CT301-2 (R-CH) and
repeat the steps given above.

3. After adjustment, put TP301, 502 into NORMAL
MODE.

Adjustment Location: audio board

Record Level Adjustment

Setting:

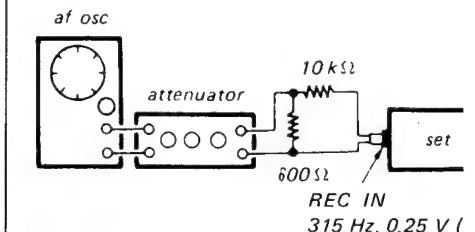
- ATTENUATOR: standard record
(See page TC-10.)

- Put TP301, 502 into TEST MODE.

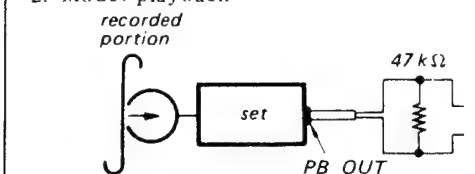
Procedure:

See page TC-16 for locations of REC IN and PB OUT.

1. Mode: record



2. Mode: playback



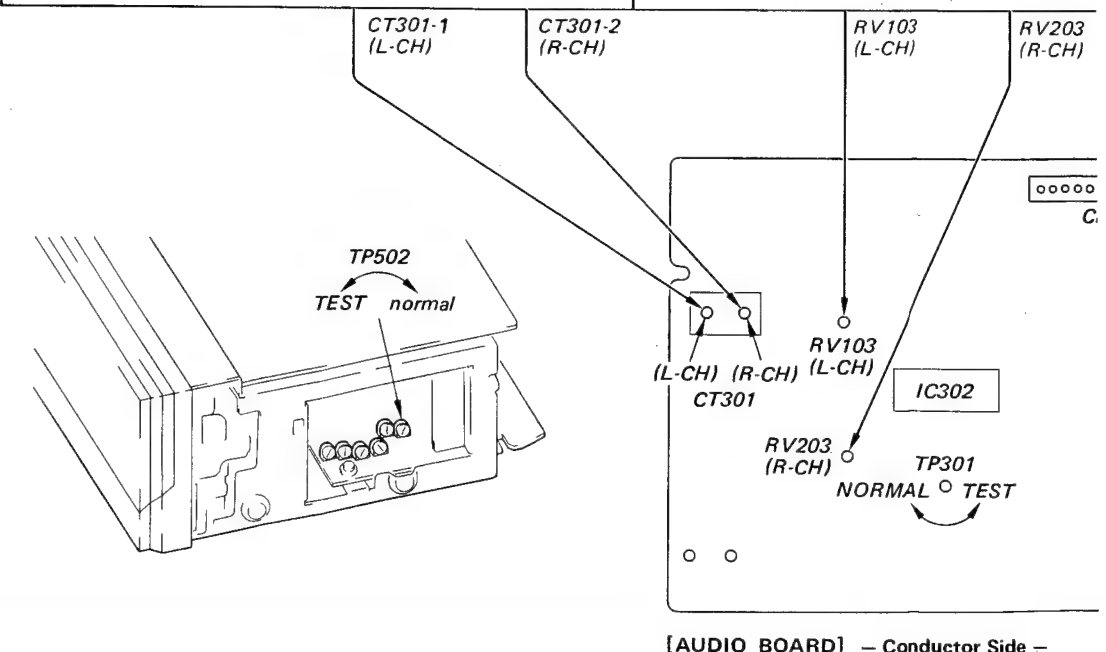
3. Play back the signal recorded in step 1
Confirm that the signal level is within
specification below. If necessary, adjust RV
RV203 (R-CH) and repeat the steps 1

Specification:

PB OUT level: 0.41 to 0.46 V
(-5.5 to -4.5 dB)

4. After adjustment, put TP301, 502 into
NORMAL MODE.

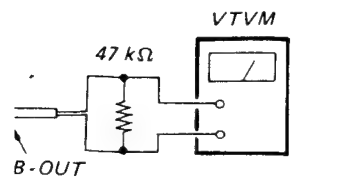
Adjustment Location: audio board



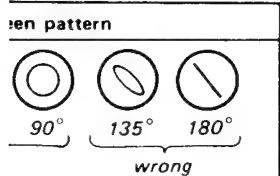
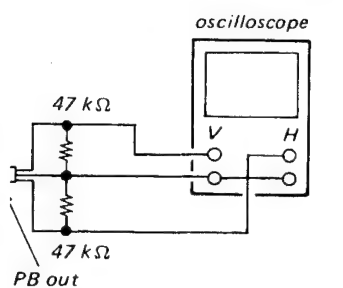
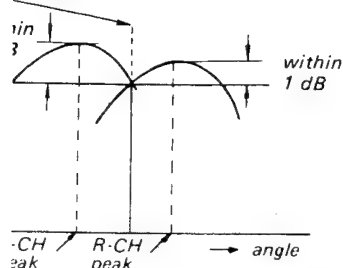
[AUDIO BOARD] - Conductor Side -

Azimuth Adjustment

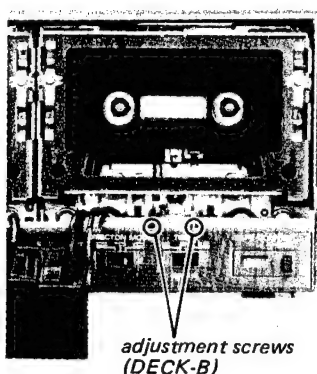
locations of REC IN and PB
OUT



screw for the maximum out-
puts do not match, turn the
until both of output levels
1 dB.



, lock the screws with locking



adjustment screws
(DECK-B)

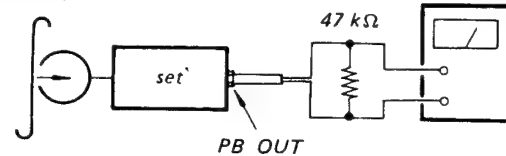
Playback Level Adjustment

Procedure:

See page TC-10 for locations of REC IN and PB
OUT.

Mode: playback

test tape
P-4-L300
(315 Hz, 0 dB)



Adjust,

DECK-A side RV101 (L-CH), RV201 (R-CH)

DECK-B side RV102 (L-CH), RV202 (R-CH)

so that the specifications are satisfied.

Specification:

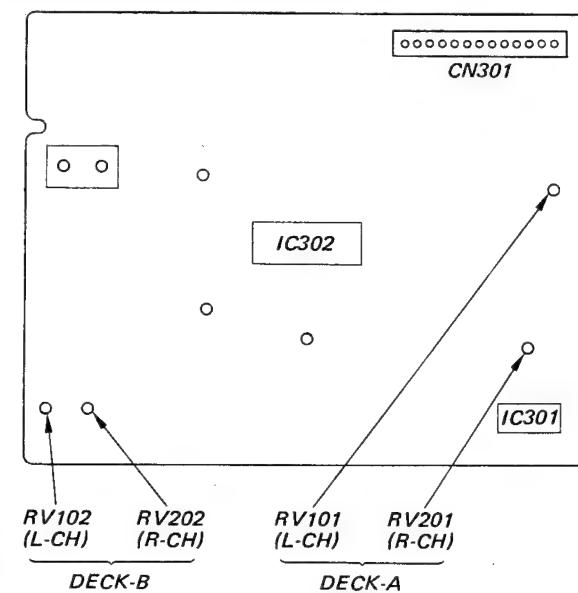
PB OUT level: 0.41 to 0.46 V (−5.5 to −4.5 dB)

Level difference between channels: less than 0.5 dB

Check that the PB OUT level does not change in
playback mode while changing the mode from
playback to stop several times.

Adjustment Location: audio board

[AUDIO BOARD] — Conductor Side —



Record Bias Adjustment

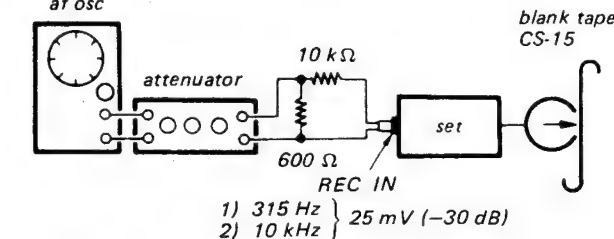
Setting:

- ATTENUATOR: standard record
(See page TC-10.)
- Put TP301, 502 into TEST MODE.

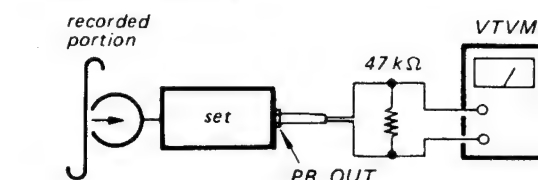
Procedure:

See page TC-16 for locations of REC IN and PB
OUT.

1. Mode: record
af osc



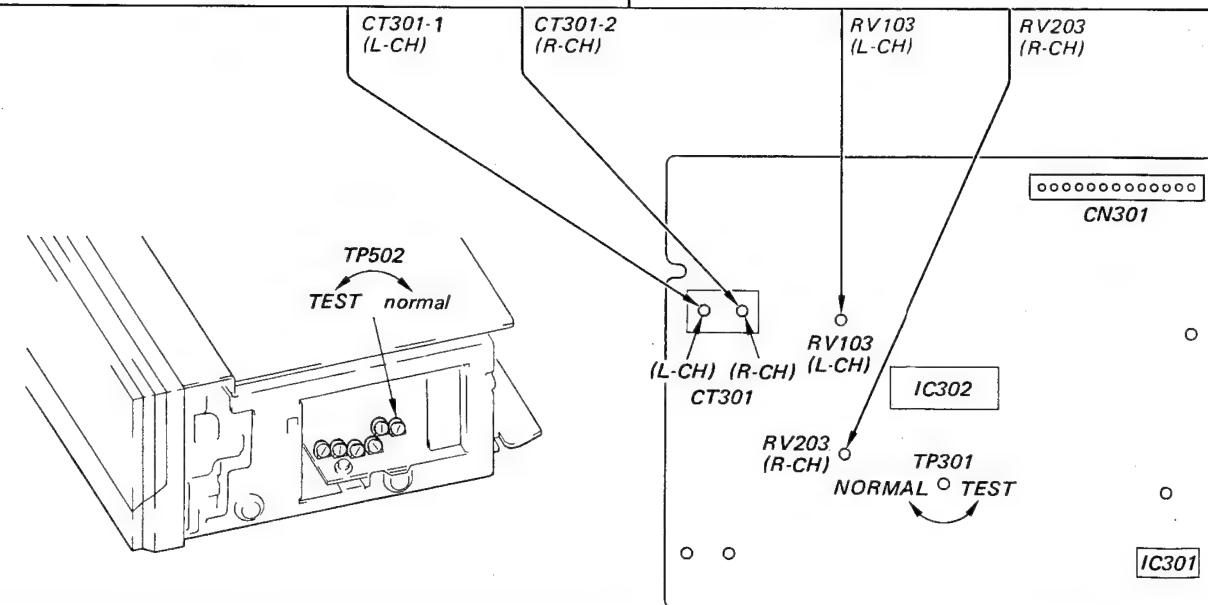
2. Mode: playback



Confirm that the 10 kHz playback output is 0
±0.5 dB relative to the 315 Hz output. If neces-
sary, adjust CT301-1 (L-CH), CT301-2 (R-CH) and
repeat the steps given above.

3. After adjustment, put TP301, 502 into NORMAL
MODE.

Adjustment Location: audio board



Record Level Adjustment

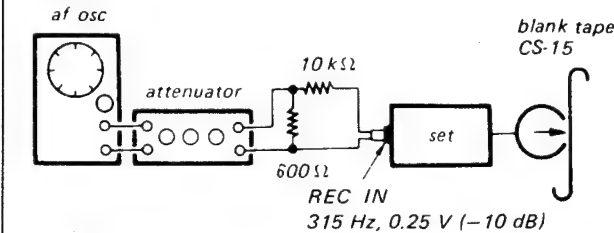
Setting:

- ATTENUATOR: standard record
(See page TC-10.)
- Put TP301, 502 into TEST MODE.

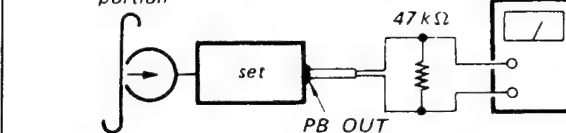
Procedure:

See page TC-16 for locations of REC IN and PB
OUT.

1. Mode: record
af osc



2. Mode: playback
recorded portion



3. Play back the signal recorded in step 1.

Confirm that the signal level is within the speci-
fication below. If necessary, adjust RV103 (L-CH),
RV203 (R-CH) and repeat the steps 1 – 3.

Specification:

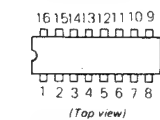
PB OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)

4. After adjustment, put TP301, 502 into NORMAL
MODE.

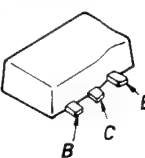
Adjustment Location: audio board

Semiconductor Lead Layouts

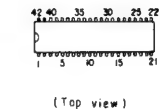
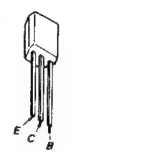
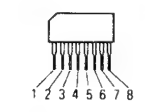
CX10034



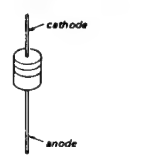
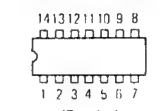
2SB1094-L



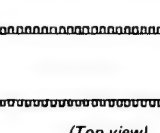
CX20187

2SC2603F
DTA114ES
DTA144ES
DTC114ES
DTC144ES
DTC134TSLA3160
M5218L

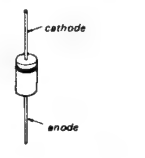
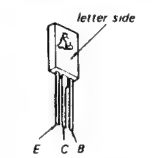
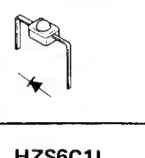
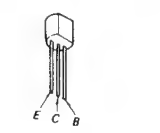
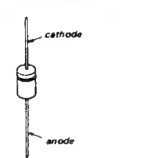
1SS119

LA3220
MB84066B
MB84069UB

M50742-404SP



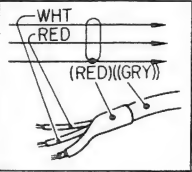
10E2N

2SB731
2SD809GL-1EG102
GL-1HY102
GL-1PR1022SB1013
2SD1387HZS6C1L
HZS9A2L
HZS9B2L

4-1. MOUNTING DIAGRAM

See page TC-13 for Semiconductor Lead Layouts.

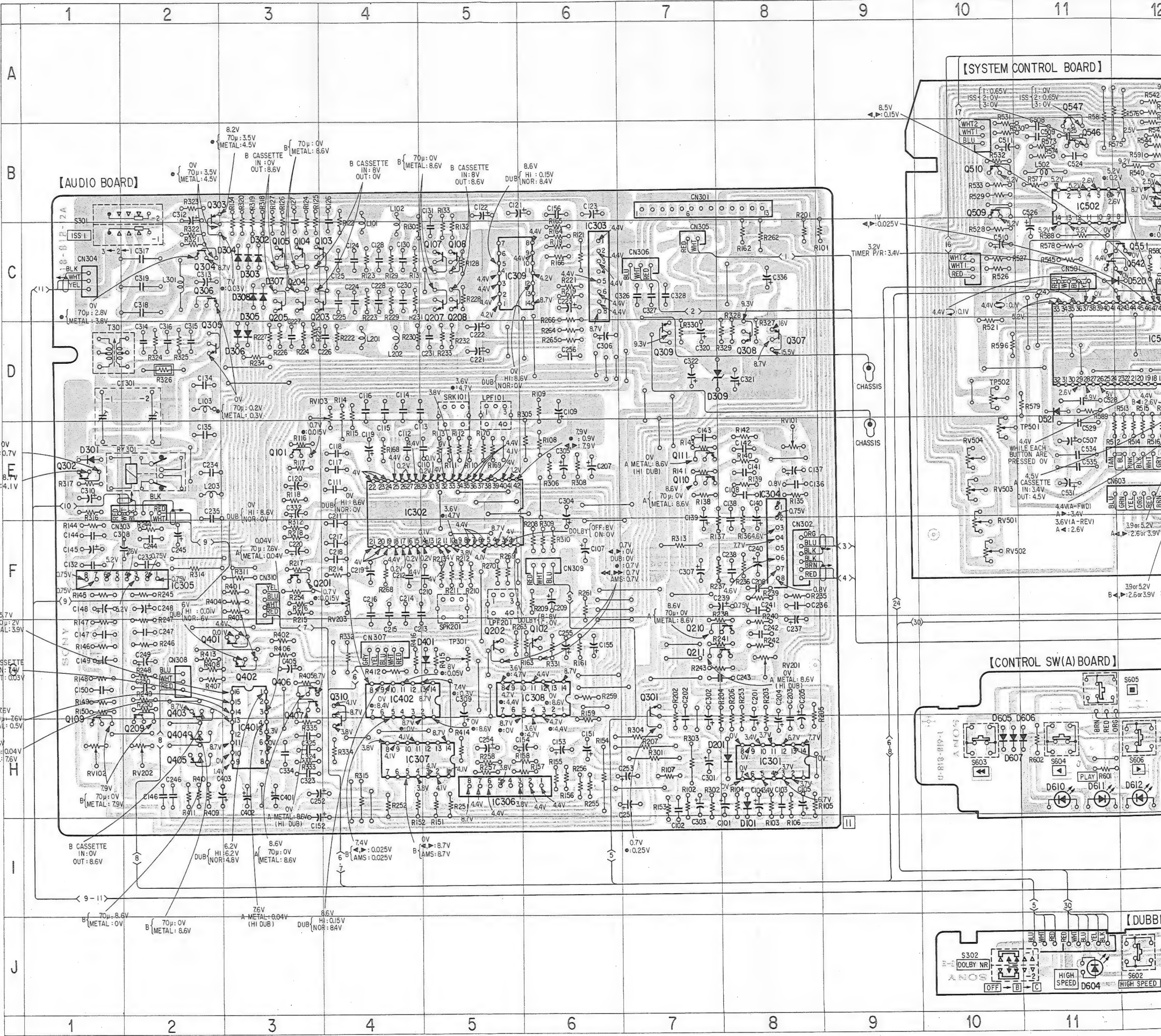
Note:
Color code or sleeving over the end of the jacket.



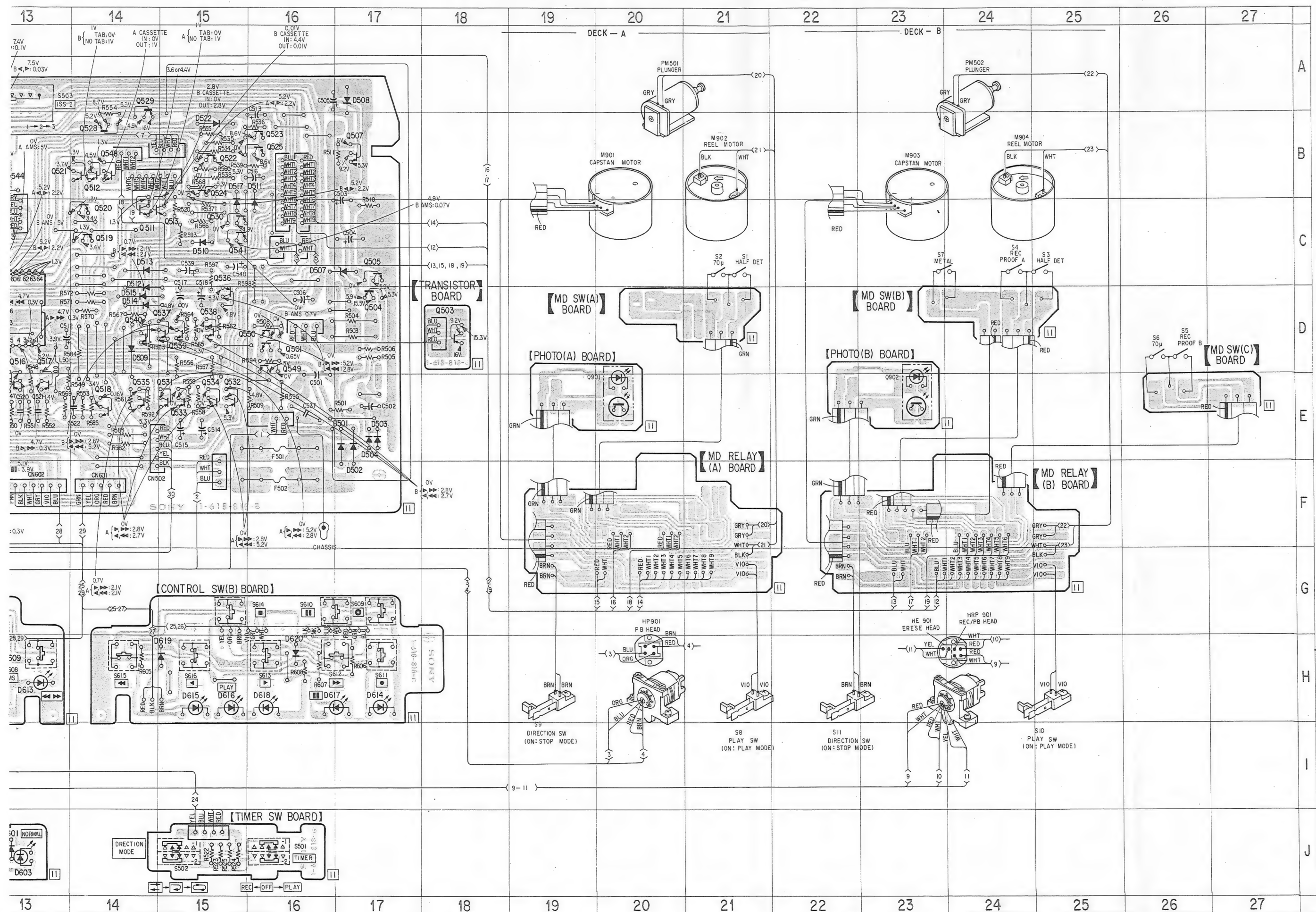
○ : parts extracted from the component side.
■ : part mounted on the conductor side.

SEMICONDUCTOR LOCATION

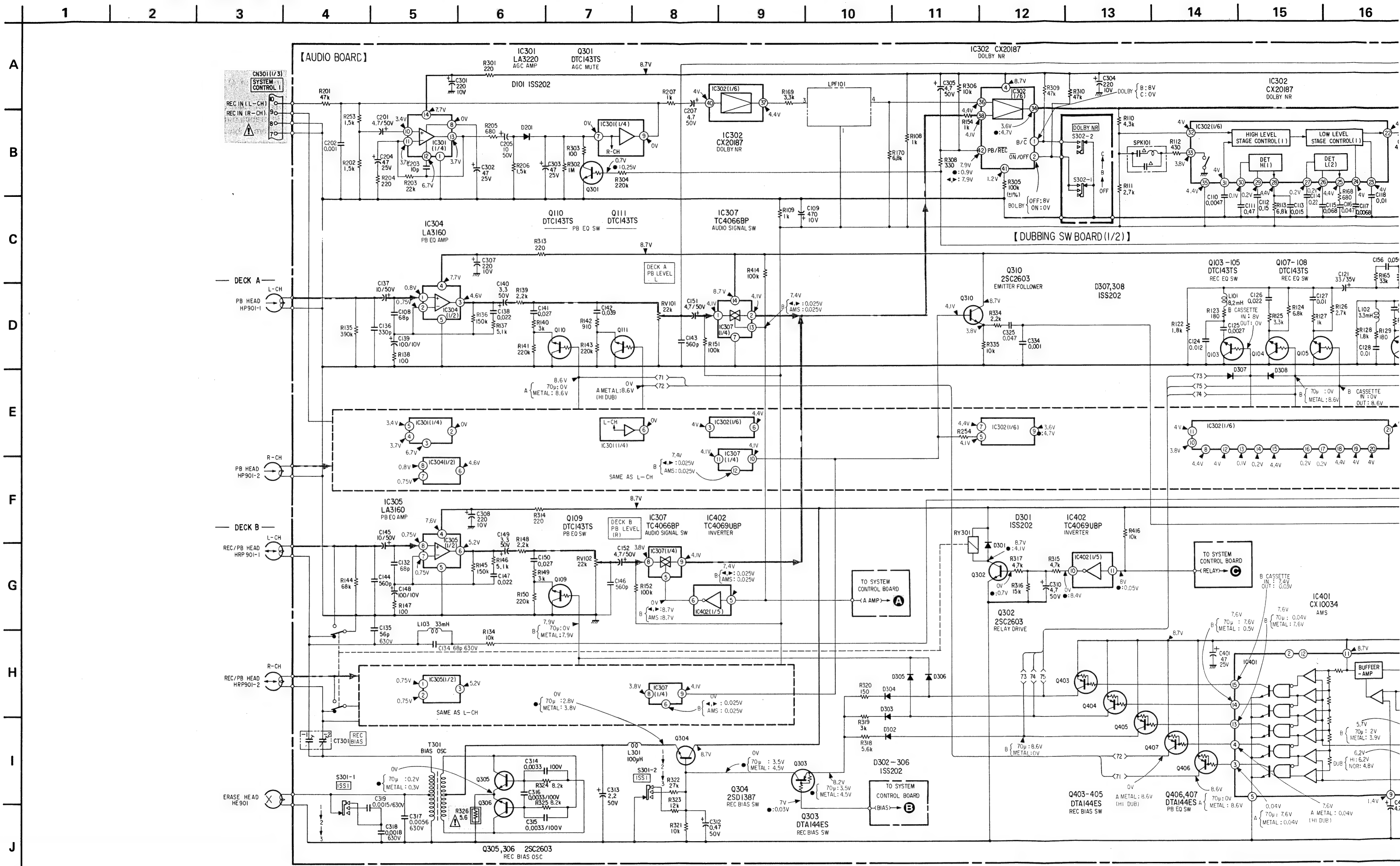
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	H-8	IC301	H-8	Q505	C-17
D201	H-8	IC302	E-4	Q507	B-17
D301	E-1	IC303	C-6	Q508	B-12
D302	C-3	IC304	F-8	Q509	B-10
D303	C-3	IC305	F-2	Q510	B-10
D304	C-3	IC306	H-5	Q511	C-14
D305	D-3	IC307	H-4	Q512	B-14
D306	D-3	IC308	G-6	Q513	C-15
D307	C-3	IC309	C-5	Q514	E-12
D308	C-3	IC401	H-3	Q515	E-13
D309	D-8	IC402	G-4	Q516	E-13
D401	G-5	IC501	D-12	Q517	E-13
D501	E-17	IC502	B-11	Q518	E-14
D502	E-17			Q519	C-14
D503	E-17	Q101	E-3	Q520	C-14
D504	E-17	Q102	G-6	Q521	B-13
D507	C-17	Q103	C-4	Q522	B-15
D508	A-17	Q104	C-3	Q523	B-16
D509	D-14	Q105	C-3	Q524	B-15
D510	C-15	Q107	C-5	Q525	B-16
D511	C-16	Q108	C-5	Q526	A-12
D512	D-14	Q109	G-1	Q527	B-12
D513	C-14	Q110	E-7	Q528	B-14
D514	D-14	Q111	E-7	Q529	A-14
D515	D-14	Q201	F-3	Q530	C-15
D516	B-12	Q202	G-5	Q531	E-15
D517	C-15	Q203	C-4	Q532	E-15
D519	B-13	Q204	C-3	Q533	E-15
D520	C-12	Q205	C-3	Q534	E-15
D521	D-11	Q207	C-5	Q535	E-14
D522	B-15	Q208	C-5	Q536	D-15
D523	C-13	Q209	G-2	Q537	D-15
D524	C-12	Q210	G-7	Q538	D-15
D525	C-12	Q211	G-7	Q539	D-15
D601	J-13	Q301	G-7	Q540	D-14
D602	J-12	Q302	E-1	Q541	C-15
D603	J-13	Q303	B-2	Q542	C-11
D604	J-11	Q304	C-2	Q543	B-12
D605	H-10	Q305	D-2	Q544	B-13
D606	H-10	Q306	C-2	Q545	C-13
D607	H-10	Q307	D-8	Q546	B-11
D608	H-12	Q308	D-8	Q547	B-11
D609	H-13	Q309	D-7	Q548	B-14
D610	H-11	Q310	G-4	Q549	D-16
D611	H-11	Q401	G-3	Q550	D-16
D612	H-12	Q402	G-3	Q551	C-12
D613	H-13	Q403	G-2		
D614	H-17	Q404	H-2		
D615	H-15	Q405	H-2		
D616	H-15	Q406	G-3		
D617	H-17	Q407	G-3		
D618	H-16	Q501	D-16		
D619	H-15	Q503	D-18		
D620	H-16	Q504	D-17		

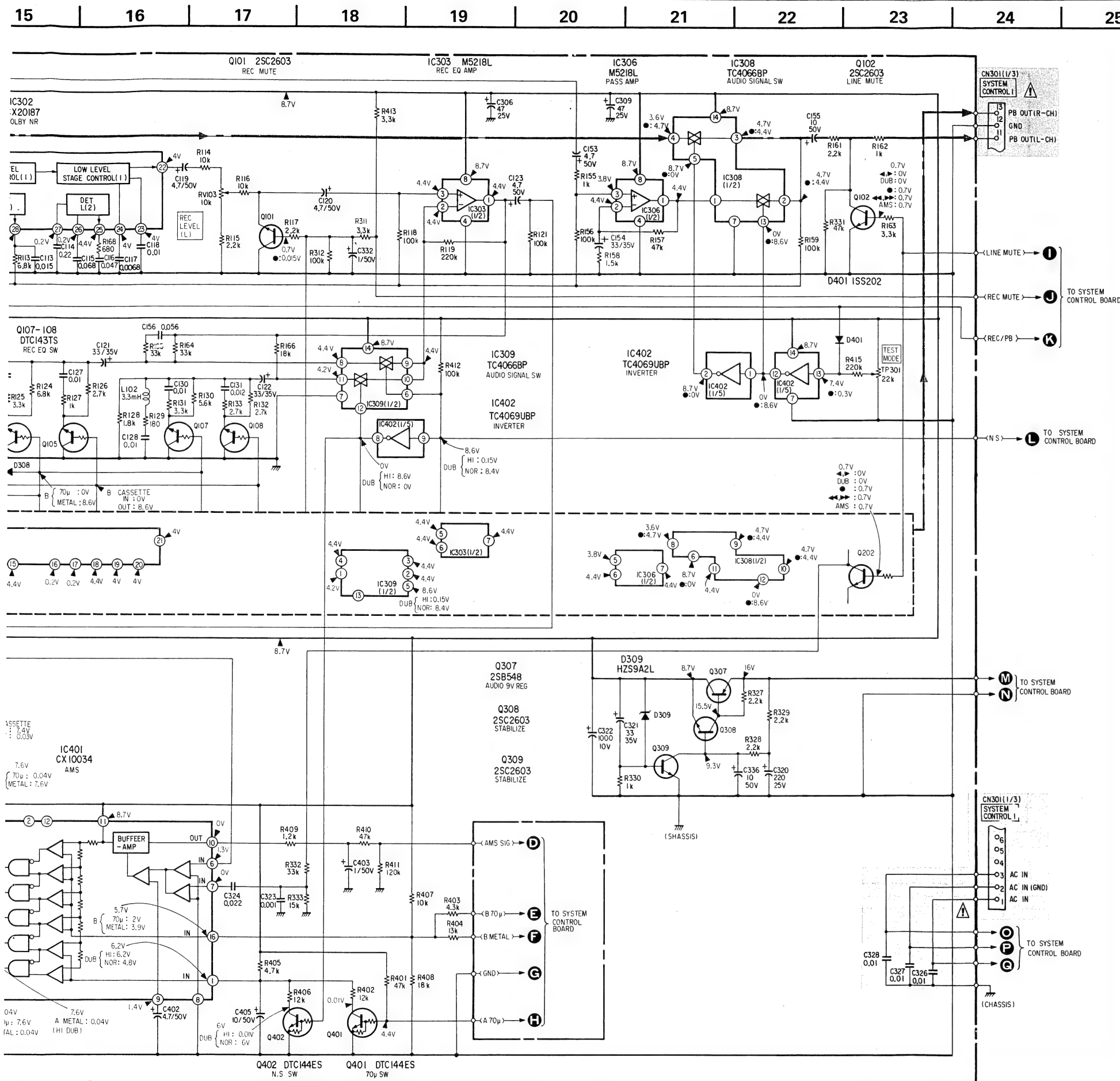









4-2. SCHEMATIC DIAGRAM — AUDIO SECTION —










Note:

- All capacitors are in μF unless otherwise noted. pF : μpF
50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{ W}$ or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from 300.
-  : nonflammable resistor.
- % indicates tolerances.
-  : B+ bus.
-  : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 $\text{k}\Omega/\text{V}$).
- Voltage variations may be noted due to normal production tolerances.
- no mark: STOP mode
 - : RECODE mode
 - ▶ : FORWARD mode
 - ◀ : REVERSE mode
 - ▶▶ : FAST-FORWARD mode
 - ◀◀ : REWIND mode

Ref. No.	Switch	Position
S301	ISS 1	1
S302	DOLBY NR	OFF

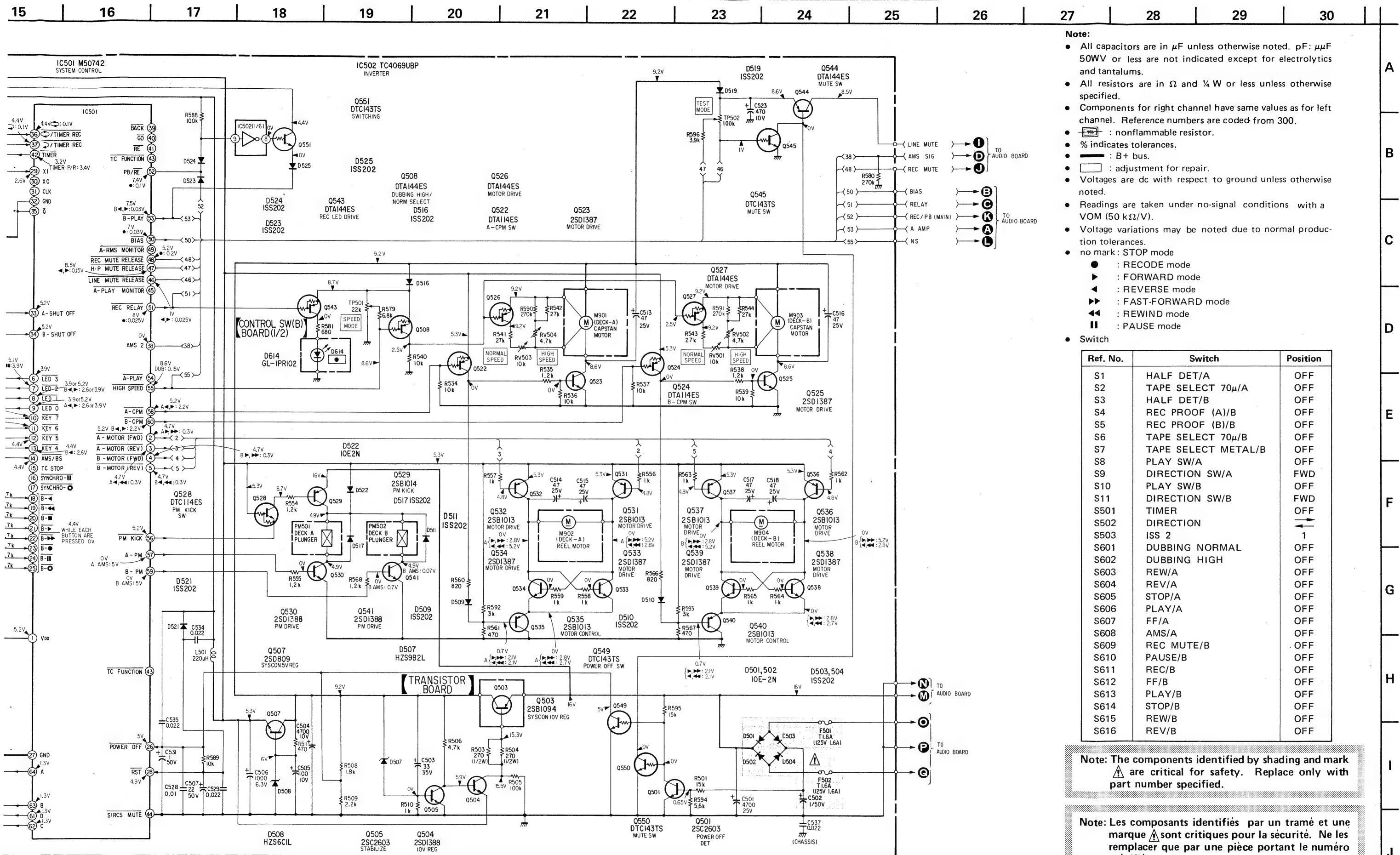
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

-  : signal path.
-  : L-CH signal path.
-  : R-CH signal path.

FH-110WX/110W/100W TC-157W/157WX





SECTION 5

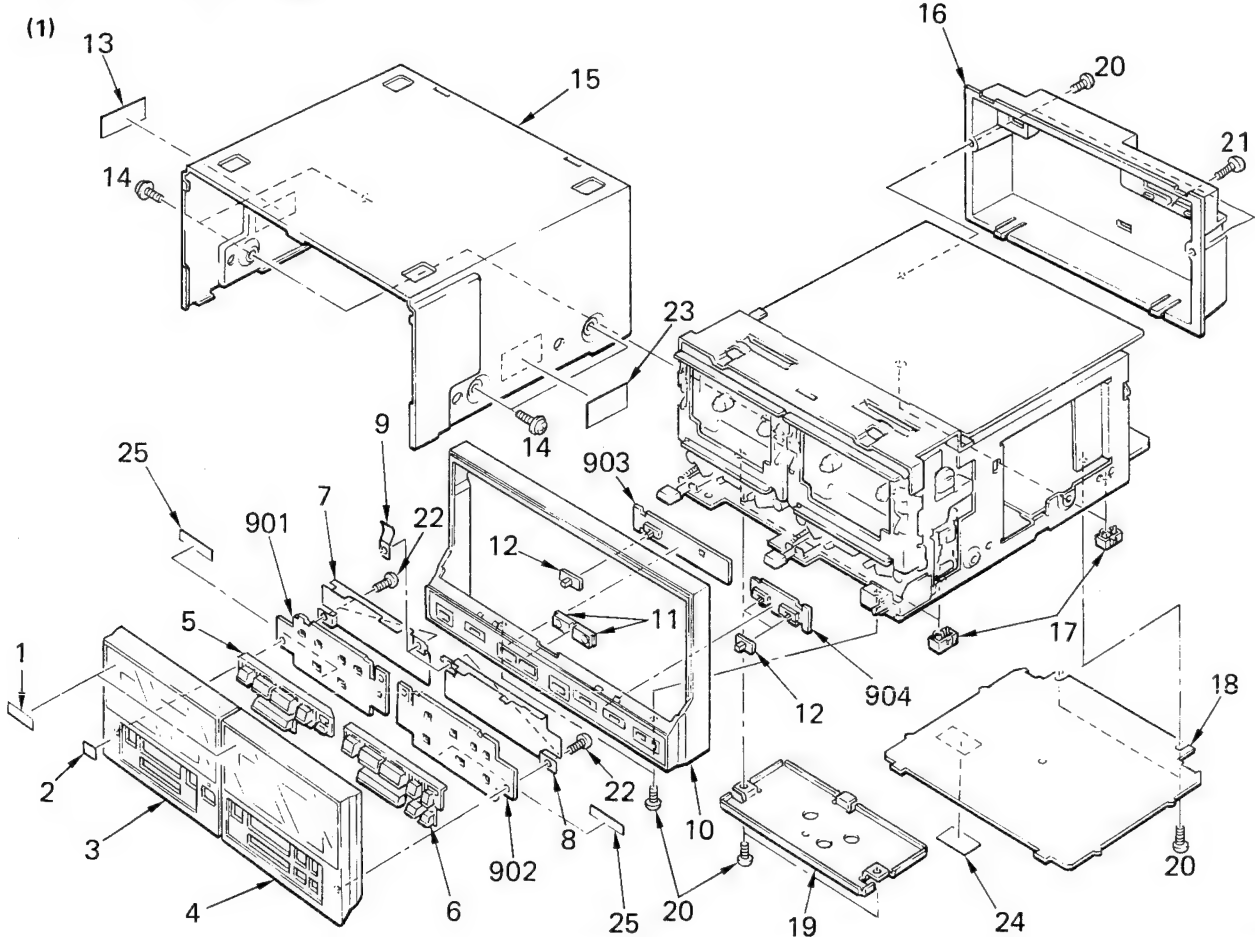
EXPLODED VIEWS AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

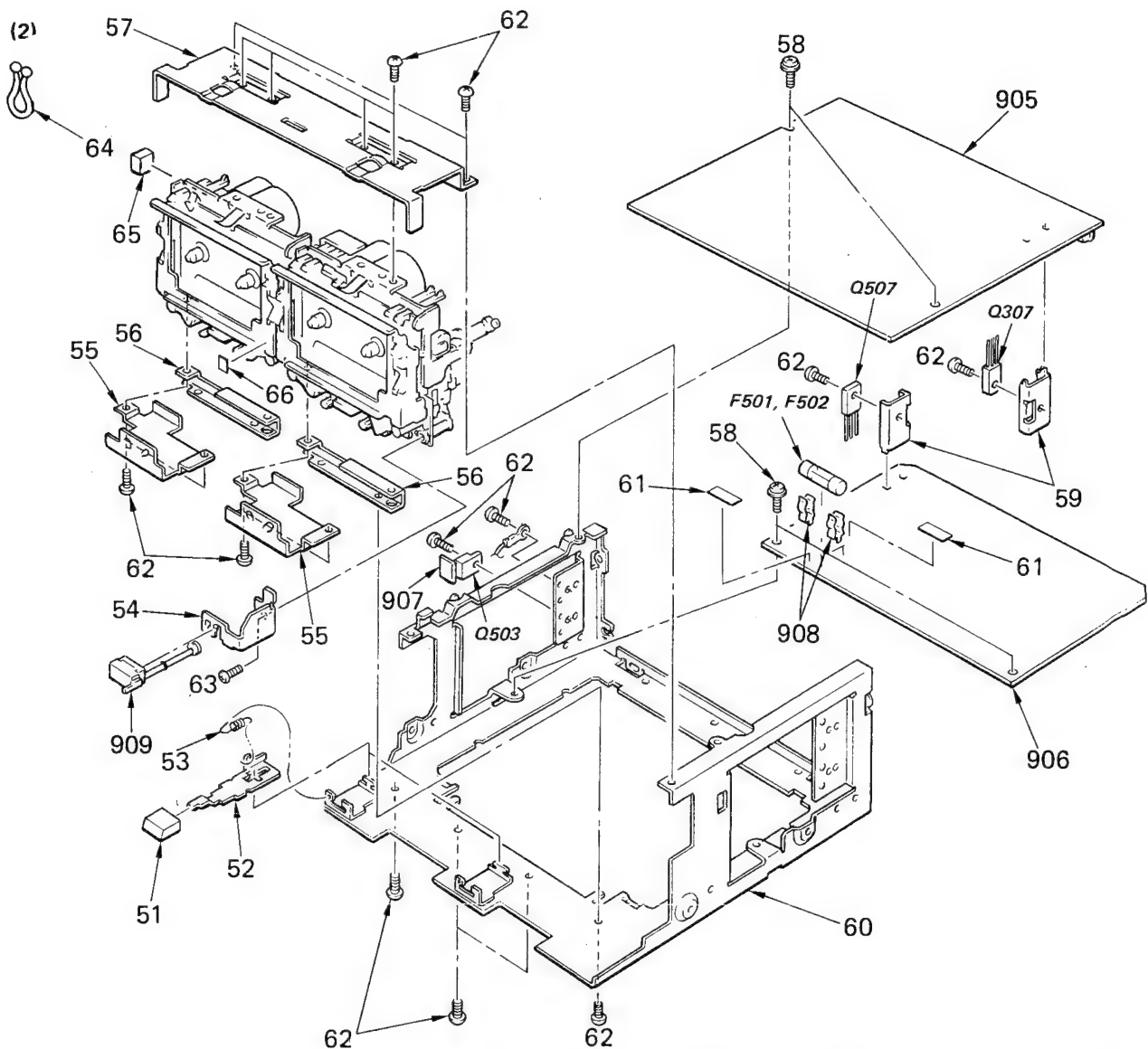
The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	4-911-673-01	SEAL, COVER		14	4-886-821-01	SCREW, M3 CASE	
2	3-703-713-41	STICKER, SONY SYMBOL (10)		15	3-325-595-01	CASE	
3	X-3325-536-1	(TC-157W:E2/3)...LID (A) ASSY, CASSETTE		16	*3-325-561-11	PLATE, JACK	
	X-3325-538-1	(TC-157WX:US,Canadian,AEP) ...LID (A) ASSY, CASSETTE		17	X-4902-937-1	FOOT ASSY, RUBBER	
4	X-3325-537-1	(TC-157W:E2/3)...LID (B) ASSY, CASSETTE		18	*3-325-594-01	PLATE, BOTTOM	
	X-3325-539-1	(TC-157WX:US,Canadian,AEP) ...LID (B) ASSY, CASSETTE		19	*3-325-599-01	COVER, WIRING	
5	X-3325-533-1	BUTTON, ASSY (A)		20	7-685-871-01	SCREW +BVTT 3X6 (S)	
6	X-3325-534-1	BUTTON, ASSY (B)		21	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
7	3-333-801-01	PLATE (A), SHIELD		22	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
8	3-333-802-01	PLATE (B), SHIELD		23	3-703-978-01	(TC-157WX:US)...LABEL (A), FIRE CAUTION	
9	3-333-813-01	SPRING (B)		24	3-703-044-26	(TC-157WX:US,Canadian)...LABEL, CAUTION	
10	X-3325-535-1	PANEL ASSY, FRONT		25	3-573-629-21	CUSHION (B)	
11	3-325-544-11	BUTTON (B), DUBBING		901	*A-2056-337-A	MOUNTED PCB, AUDIO	
12	3-323-415-31	KNOB, SWITCH TIMER		902	*A-2056-337-A	MOUNTED PCB, AUDIO	
13	*3-333-808-01	(TC-157WX:US,Canadian) ...LABEL, MODEL NUMBER (W)		903	*A-2056-337-A	MOUNTED PCB, AUDIO	
	*3-333-810-01	(TC-157W:E2/3)...LABEL, MODEL NUMBER (W)		904	*A-2056-337-A	MOUNTED PCB, AUDIO	

FH-110WX/110W/100W TC-157W/157WX

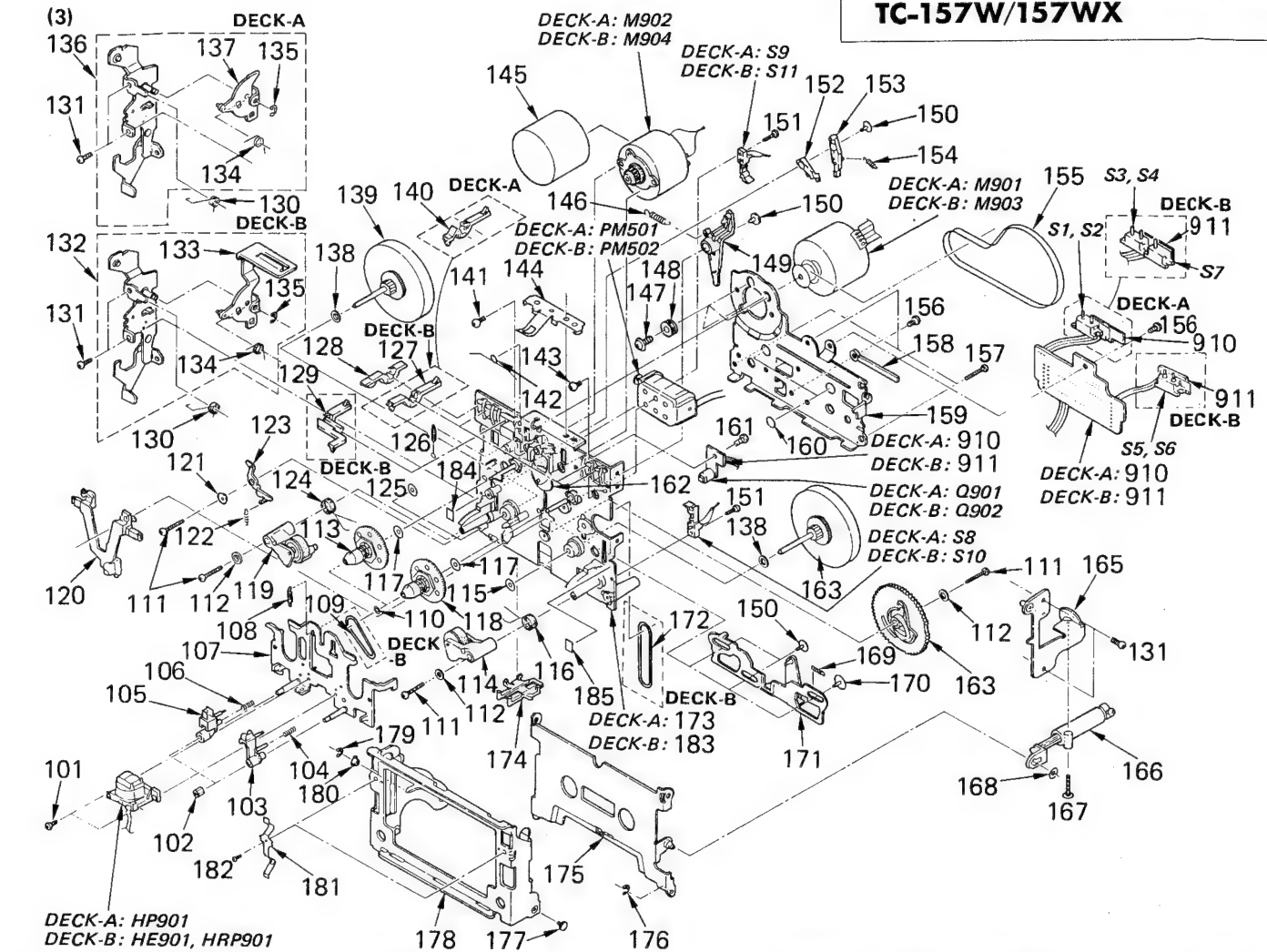


No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	3-329-952-11	BUTTON, EJECT		905	*A-2056-337-A	MOUNTED PCB, AUDIO	
52	*3-325-590-01	SLIDER, EJECT		906	*A-2056-337-A	MOUNTED PCB, AUDIO	
53	3-578-393-00	SPRING, TENSION		907	*A-2056-337-A	MOUNTED PCB, AUDIO	
54	*3-325-593-01	BRACKET, COUNTER		908	1-533-162-00	HOLDER, FUSE	
55	*3-333-811-01	PLATE, SHIELD, HEAD		909	1-548-585-31	COUNTER, TAPE (SMALL TYPE)	
56	*3-325-598-01	BRACKET, MD		Q307	8-729-173-13	TRANSISTOR 2S8731	
57	*3-333-803-01	JOINT		Q503	8-729-111-67	TRANSISTOR 2SB1094-L	
58	3-703-249-01	SCREW, S TIGHT, +PTTW 3X6		Q507	8-729-180-93	TRANSISTOR 2SD809	
59	*3-312-615-31	HEAT SINK		F501	△.1-532-259-00	(TC-157W:E2/3,TC-157WX:AEP) ...FUSE, TIME-LAG	
60	*X-3325-527-1	CHASSIS ASSY (W)		F501	△.1-532-742-11	(TC-157WX:US,Canadian) ...FUSE, GLASS TUBE	
61	*3-701-946-22	(TC-157WX:US,Canadian).....LABEL, FUSE		F502	△.1-532-259-00	(TC-157W:E2/3,TC-157WX:AEP) ...FUSE, TIME-LAG	
	*3-701-948-16	(TC-157W:E2/3,TC-157WX:AEP)..LABEL, FUSE		F502	△.1-532-742-11	(TC-157WX:US,Canadian) ...FUSE, GLASS TUBE	
62	7-685-871-01	SCREW +BVTT 3X6 (S)					
63	7-685-104-14	SCREW +P 2X6 TYPE2 NON-SLIT					
64	*3-703-321-01	PURSE LOCK (DIA. 16)					
65	*3-324-837-01	CUSHION					
66	3-831-441-XX	CUSHION (A)					

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

FH-110WX/110W/100W TC-157W/157WX



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	3-391-109-01	SCREW, WASHER		146	3-391-133-01	SPRING		M901	X-3391-117-1	MOTOR ASSY, CAPSTAN	
102	3-391-110-01	NUT, ADJUSTMENT		147	3-391-147-01	SCREW, MOTOR FITTING		M902	X-3391-118-1	MOTOR ASSY, REEL	
103	3-391-111-01	GUIDE, TAPE		148	3-391-138-01	MOTOR, CUSHION		M903	X-3391-117-1	MOTOR ASSY, CAPSTAN	
104	3-391-112-01	SPRING (RIGHT)		149	X-3391-114-1	ARM ASSY, PLAY		M904	X-3391-118-1	MOTOR ASSY, REEL	
105	3-391-156-01	HOLDER, SENSOR		150	3-391-126-01	CAP		PM501	1-454-428-11	SOLENOID, PLUNGER	
106	3-391-113-01	SPRING (LEFT)		151	7-685-104-14	SCREW +P 2X6 TYPE2 SLIT		PM502	1-454-428-11	SOLENOID, PLUNGER	
107	X-3391-103-1	HEAD ASSY, PLATE		152	3-391-141-01	ARM (A)		Q901	1-807-509-11	PHOTO SENSOR	
108	3-391-114-01	SPRING		153	3-391-142-01	ARM (B)		Q902	1-807-509-11	PHOTO SENSOR	
109	3-391-161-01	BELT, MIDDLE		154	3-391-140-01	SPRING (A)		S1	1-570-720-11	SWITCH, PUSH (1 KEY)	
110	3-701-436-11	WASHER, 1.6		155	3-391-134-01	BELT, MAIN		S2	1-570-720-11	SWITCH, PUSH (1 KEY)	
111	7-685-107-14	SCREW +P 2X12 TYPE2 SLIT		156	7-685-781-04	SCREW +BVTT 2X4 (S)		S3	1-570-720-11	SWITCH, PUSH (1 KEY)	
112	7-688-001-11	W 2, MIDDLE		157	7-685-131-19	SCREW +P 2.6X4 TYPE2 NON-SLIT		S4	1-570-720-11	SWITCH, PUSH (1 KEY)	
113	X-3391-106-1	REEL ASSY		158	3-701-822-00	HOLDER, WIRE		S5	1-570-720-11	SWITCH, PUSH (1 KEY)	
114	X-3391-104-1	PINCH ROLLER ASSY		159	*3-391-130-01	BRACKET (B), F/W		S6	1-570-720-11	SWITCH, PUSH (1 KEY)	
115	3-391-119-01	SEAL, WASHER OIL		160	3-391-129-01	SPACER		S7	1-570-723-11	SWITCH, PUSH (1 KEY)	
116	3-391-115-01	SPRING (RIGHT)		161	7-685-105-14	SCREW +P 2X8 TYPE2 SLIT		S8	1-570-719-11	SWITCH, LEAF	
117	3-327-708-31	WASHER		162	X-3391-111-1	ROLLER ASSY		S9	1-570-721-11	SWITCH, LEAF	
118	X-3391-107-1	REEL ASSY, T.U		163	X-3391-113-1	ASSY F/W		S10	1-570-719-11	SWITCH, LEAF	
119	X-3391-105-1	PINCH ROLLER ASSY		164	3-391-128-01	GEAR (B), CAM		S11	1-570-721-11	SWITCH, LEAF	
120	X-3391-108-1	BRAKE ASSY		165	*3-391-144-01	BRACKET (R), DAMPER					
121	3-391-120-01	CALLOR		166	*X-3391-115-1	DAMPER ASSY					
122	3-391-122-01	SPRING (A)		167	7-621-955-75	SCREW, TOTSU PWM 2X12					
123	3-391-121-01	ARM, EJECT SAFETY		168	*3-391-148-01	WASHER LOCK					
124	3-391-116-01	SPRING (LEFT)		169	3-391-127-01	SPRING					
125	3-391-117-01	SEAL, WASHER OIL		170	3-391-143-01	CAP					
126	3-391-139-01	SPRING		171	X-3391-112-1	PLATE ASSY, SILDE					
127	3-391-157-01	LEVER, REC INSPECTION		172	3-391-160-01	BELT, COUNTER					
128	3-391-131-01	LEVER, PACK INSPECTION		173	X-3391-110-1	CHASSIS ASSY					
129	3-391-159-01	LEVER, METAL INSPECTION		174	3-391-137-01	HOLDER, REED					
130	3-391-154-01	SPRING (A)		175	3-391-149-01	PLATE, ORNAMENTAL					
131	7-685-790-04	SCREW +PTT 2.6X4 (S)		176	7-624-102-04	STOP RING 1.5, TYPE -E					
132	X-3391-126-1	ARM ASSY, EJECT	133-135	177	3-391-152-01	STUD, DOOR					
133	*3-391-163-01	LEVER (B), EJECT		178	3-391-150-01	HOLDER, CASSETTE					
134	3-391-146-01	SPRING (B)		179	7-624-104-04	STOP RING 2.0, TYPE -E					
135	7-624-105-04	STOP RING 2.3, TYPE -E		180	3-391-153-01	ROLLER					
136	X-3391-116-1	ARM ASSY, EJECT	134,135,137	181	3-391-151-01	SPRING					
137	*3-391-145-01	LEVER (B), EJECT		182	7-685-780-04	SCREW +PTT 2X3 (S)					
138	3-701-438-11	WASHER, 2.5		183	*X-3391-128-1	PARTS, PREPARATION, CHASSIS					
139	X-3391-109-1	F/W ASSY		184	*3-333-821-01	CUSHION (LEFT), HOLDER					
140	3-391-115-01	SPRING (RIGHT)		185	*3-333-820-01	CUSHION (RIGHT), HOLDER					
141	3-391-118-01	SCREW, WASHER		910	1-589-048-11	BLOCK, PC BOARD					
142	3-391-124-01	SPRING		911	1-589-050-11	BLOCK, PC BOARD					
143	7-628-253-95	SCREW +PS 2.6X4		HE901	X-3391-127-1	HEAD ASSY, ROTARY					
144	3-391-125-01	SPRING		HP901	X-3391-102-1	HEAD ASSY, ROTARY					
145	3-391-132-01	PLATE, SHIELD		HRP901	X-3391-127-1	HEAD ASSY, ROTARY					

ELECTRICAL PARTS LIST

NOTE:

- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μμF.

RESISTORS

- All resistors are in ohms.
- F : nonflammable

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:

UA.... : μA..., UPA.... : μPA..., UPC.... : μPC,
 UPD.... : μPD...

The components identified by shading and mark **▲** are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque **▲** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-2056-337-A	MOUNTED PCB, AUDIO			
902	*A-2056-337-A	MOUNTED PCB, AUDIO			
903	*A-2056-337-A	MOUNTED PCB, AUDIO			
904	*A-2056-337-A	MOUNTED PCB, AUDIO			
905	*A-2056-337-A	MOUNTED PCB, AUDIO			
906	*A-2056-337-A	MOUNTED PCB, AUDIO			
907	*A-2056-337-A	MOUNTED PCB, AUDIO			
908	1-533-162-00	HOLDER, FUSE			
909	1-548-585-31	COUNTER, TAPE (SMALL TYPE)			
910	1-589-048-11	BLOCK, PC BOARD			
911	1-589-050-11	BLOCK, PC BOARD			
C101	1-124-927-11	ELECT	4.7MF	20%	50V
C102	1-162-294-31	CERAMIC	0.001MF	10%	50V
C103	1-162-199-31	CERAMIC	10PF	5%	50V
C104	1-124-477-11	ELECT	47MF	20%	25V
C105	1-124-907-00	ELECT	10MF	20%	50V
C107	1-124-927-11	ELECT	4.7MF	20%	50V
C108	1-162-219-31	CERAMIC	68PF	5%	50V
C109	1-124-472-11	ELECT	470MF	20%	10V
C110	1-110-203-00	MYLAR	0.0047MF	5%	50V
C111	1-136-173-00	FILM	0.47MF	5%	50V
C112	1-136-167-00	FILM	0.15MF	5%	50V
C113	1-136-155-00	FILM	0.015MF	5%	50V
C114	1-136-169-00	FILM	0.22MF	5%	50V
C115	1-136-163-00	FILM	0.068MF	5%	50V
C116	1-136-161-00	FILM	0.047MF	5%	50V
C117	1-110-205-00	MYLAR	0.0068MF	5%	50V
C118	1-136-153-00	FILM	0.01MF	5%	50V
C119	1-124-927-11	ELECT	4.7MF	20%	50V
C120	1-124-927-11	ELECT	4.7MF	20%	50V
C121	1-124-482-11	ELECT	33MF	20%	35V
C122	1-124-482-11	ELECT	33MF	20%	35V
C123	1-124-927-11	ELECT	4.7MF	20%	50V
C124	1-136-154-00	FILM	0.012MF	5%	50V
C125	1-110-200-00	MYLAR	0.0027MF	5%	50V
C126	1-136-157-00	FILM	0.022MF	5%	50V
C127	1-136-153-00	FILM	0.01MF	5%	50V
C128	1-136-153-00	FILM	0.01MF	5%	50V
C130	1-136-153-00	FILM	0.01MF	5%	50V
C131	1-136-154-00	FILM	0.012MF	5%	50V
C132	1-162-219-31	CERAMIC	68PF	5%	50V
C134	1-136-272-00	FILM	68PF	5%	630V
C135	1-136-271-00	FILM	56PF	5%	630V
C136	1-162-288-31	CERAMIC	330PF	10%	50V
C137	1-124-907-00	ELECT	10MF	20%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C138	1-136-157-00	FILM	0.022MF	5%	50V
C139	1-124-443-00	ELECT	100MF	20%	10V
C140	1-124-905-11	ELECT	3.3MF	20%	50V
C141	1-136-158-00	FILM	0.027MF	5%	50V
C142	1-136-160-00	FILM	0.039MF	5%	50V
C143	1-162-291-31	CERAMIC	560PF	10%	50V
C144	1-162-291-31	CERAMIC	560PF	10%	50V
C145	1-124-907-00	ELECT	10MF	20%	50V
C146	1-162-291-31	CERAMIC	560PF	10%	50V
C147	1-136-157-00	FILM	0.022MF	5%	50V
C148	1-124-443-00	ELECT	100MF	20%	10V
C149	1-124-905-11	ELECT	3.3MF	20%	50V
C150	1-136-158-00	FILM	0.027MF	5%	50V
C151	1-124-927-11	ELECT	4.7MF	20%	50V
C152	1-124-927-11	ELECT	4.7MF	20%	50V
C153	1-124-927-11	ELECT	4.7MF	20%	50V
C154	1-124-482-11	ELECT	33MF	20%	35V
C155	1-124-907-00	ELECT	10MF	20%	50V
C156	1-136-162-00	FILM	0.056MF	5%	50V
C201	1-124-927-11	ELECT	4.7MF	20%	50V
C202	1-162-294-31	CERAMIC	0.001MF	10%	50V
C203	1-162-199-31	CERAMIC	10PF	5%	50V
C204	1-124-477-11	ELECT	47MF	20%	25V
C205	1-124-907-00	ELECT	10MF	20%	50V
C207	1-124-927-11	ELECT	4.7MF	20%	50V
C208	1-162-219-31	CERAMIC	68PF	5%	50V
C209	1-124-472-11	ELECT	470MF	20%	10V
C210	1-110-203-00	MYLAR	0.0047MF	5%	50V
C211	1-136-173-00	FILM	0.47MF	5%	50V
C212	1-136-167-00	FILM	0.15MF	5%	50V
C213	1-136-155-00	FILM	0.015MF	5%	50V
C214	1-136-169-00	FILM	0.22MF	5%	50V
C215	1-136-163-00	FILM	0.068MF	5%	50V
C216	1-136-161-00	FILM	0.047MF	5%	50V
C217	1-110-205-00	MYLAR	0.0068MF	5%	50V
C218	1-136-153-00	FILM	0.01MF	5%	50V
C219	1-124-927-11	ELECT	4.7MF	20%	50V
C220	1-124-927-11	ELECT	4.7MF	20%	50V
C221	1-124-482-11	ELECT	33MF	20%	35V
C222	1-124-482-11	ELECT	33MF	20%	35V
C223	1-124-927-11	ELECT	4.7MF	20%	50V
C224	1-136-154-00	FILM	0.012MF	5%	50V
C225	1-110-200-00	MYLAR	0.0027MF	5%	50V
C226	1-136-157-00	FILM	0.022MF	5%	50V
C227	1-136-153-00	FILM	0.01MF	5%	50V

FH-110WX/110W/100W TC-157W/157WX

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C228	1-136-153-00	FILM	0.01MF	5%	50V
C230	1-136-153-00	FILM	0.01MF	5%	50V
C231	1-136-154-00	FILM	0.012MF	5%	50V
C232	1-162-219-31	CERAMIC	68PF	5%	50V
C234	1-136-272-00	FILM	68PF	5%	630V
C235	1-136-271-00	FILM	56PF	5%	630V
C236	1-162-288-31	CERAMIC	330PF	10%	50V
C237	1-124-907-00	ELECT	10MF	20%	50V
C238	1-136-157-00	FILM	0.022MF	5%	50V
C239	1-124-443-00	ELECT	100MF	20%	10V
C240	1-124-905-11	ELECT	3.3MF	20%	50V
C241	1-136-158-00	FILM	0.027MF	5%	50V
C242	1-136-160-00	FILM	0.039MF	5%	50V
C243	1-162-291-31	CERAMIC	560PF	10%	50V
C244	1-162-291-31	CERAMIC	560PF	10%	50V
C245	1-124-907-00	ELECT	10MF	20%	50V
C246	1-162-291-31	CERAMIC	560PF	10%	50V
C247	1-136-157-00	FILM	0.022MF	5%	50V
C248	1-124-443-00	ELECT	100MF	20%	10V
C249	1-124-905-11	ELECT	3.3MF	20%	50V
C250	1-136-158-00	FILM	0.027MF	5%	50V
C251	1-124-927-11	ELECT	4.7MF	20%	50V
C252	1-124-927-11	ELECT	4.7MF	20%	50V
C253	1-124-927-11	ELECT	4.7MF	20%	50V
C254	1-124-482-11	ELECT	33MF	20%	35V
C255	1-124-907-00	ELECT	10MF	20%	50V
C256	1-136-162-00	FILM	0.056MF	5%	50V
C301	1-124-444-00	ELECT	220MF	20%	10V
C302	1-124-477-11	ELECT	47MF	20%	25V
C303	1-124-477-11	ELECT	47MF	20%	25V
C304	1-124-444-00	ELECT	220MF	20%	10V
C305	1-124-927-11	ELECT	4.7MF	20%	50V
C306	1-124-477-11	ELECT	47MF	20%	25V
C307	1-124-444-00	ELECT	220MF	20%	10V
C308	1-124-444-00	ELECT	220MF	20%	10V
C309	1-124-477-11	ELECT	47MF	20%	25V
C310	1-124-927-11	ELECT	4.7MF	20%	50V
C312	1-124-902-00	ELECT	0.47MF	20%	50V
C313	1-124-904-00	ELECT	2.2MF	20%	50V
C314	1-130-285-00	FILM	0.0033MF	5%	100V
C315	1-130-285-00	FILM	0.0033MF	5%	100V
C316	1-130-285-00	FILM	0.0033MF	5%	100V
C317	1-129-711-00	FILM	0.0056MF	10%	630V
C318	1-129-705-00	FILM	0.0018MF	10%	630V
C319	1-130-061-00	FILM	0.0015MF	10%	630V
C320	1-124-120-11	ELECT	220MF	20%	25V
C321	1-124-482-11	ELECT	33MF	20%	35V
C322	1-124-473-11	ELECT	1000MF	20%	10V
C323	1-162-294-31	CERAMIC	0.001MF	10%	50V
C324	1-136-157-00	FILM	0.022MF	5%	50V
C325	1-136-161-00	FILM	0.047MF	5%	50V
C326	1-161-070-00	CERAMIC	0.01MF	20%	50V
C327	1-161-070-00	CERAMIC	0.01MF	20%	50V
C328	1-161-070-00	CERAMIC	0.01MF	20%	50V
C332	1-124-903-00	ELECT	1MF	20%	50V
C334	1-162-294-31	CERAMIC	0.001MF	10%	50V
C336	1-124-907-00	ELECT	10MF	20%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C401	1-124-477-11	ELECT	47MF	20%	25V
C402	1-124-927-11	ELECT	4.7MF	20%	50V
C403	1-124-903-00	ELECT	1MF	20%	50V
C405	1-124-907-00	ELECT	10MF	20%	50V
C501	1-124-564-11	ELECT	4700MF	20%	25V
C502	1-124-903-00	ELECT	1MF	20%	50V
C503	1-124-482-11	ELECT	33MF	20%	35V
C504	1-124-762-00	ELECT	4700MF	20%	10V
C505	1-124-443-00	ELECT	100MF	20%	10V
C506	1-124-471-00	ELECT	1000MF	20%	6.3V
C507	1-124-908-11	ELECT	22MF	20%	50V
C508	1-162-217-31	CERAMIC	56PF	5%	50V
C509	1-162-219-31	CERAMIC	68PF	5%	50V
C510	1-124-903-00	ELECT	1MF	20%	50V
C511	1-124-903-00	ELECT	1MF	20%	50V
C512	1-124-443-00	ELECT	100MF	20%	10V
C513	1-124-477-11	ELECT	47MF	20%	25V
C514	1-124-477-11	ELECT	47MF	20%	25V
C515	1-124-477-11	ELECT	47MF	20%	25V
C516	1-124-477-11	ELECT	47MF	20%	25V
C517	1-124-477-11	ELECT	47MF	20%	25V
C518	1-124-477-11	ELECT	47MF	20%	25V
C519	1-162-306-31	CERAMIC	0.01MF	30%	16V
C520	1-162-306-31	CERAMIC	0.01MF	30%	16V
C521	1-162-306-31	CERAMIC	0.01MF	30%	16V
C522	1-162-306-31	CERAMIC	0.01MF	30%	16V
C523	1-124-472-11	ELECT	470MF	20%	10V
C524	1-162-207-31	CERAMIC	22PF	5%	50V
C525	1-162-199-31	CERAMIC	10PF	5%	50V
C526	1-124-907-00	ELECT	10MF	20%	50V
C528	1-162-306-31	CERAMIC	0.01MF	30%	16V
C529	1-161-494-00	CERAMIC	0.022MF	30%	25V
C531	1-124-903-00	ELECT	1MF	20%	50V
C533	1-124-443-00	ELECT	100MF	20%	10V
C534	1-161-494-00	CERAMIC	0.022MF	30%	25V
C535	1-161-494-00	CERAMIC	0.022MF	30%	25V
C536	1-161-494-00	CERAMIC	0.022MF	30%	25V
C537	1-161-494-00	CERAMIC	0.022MF	30%	25V
C539	1-124-902-00	ELECT	0.47MF	20%	50V
C540	1-124-902-00	ELECT	0.47MF	20%	50V
CN301	1-562-068-13	SOCKET, CONNECTOR 13P			
CN302	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CN303	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CN304	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CN305	*1-564-505-31	PLUG, CONNECTOR 2P			
CN306	*1-564-506-11	PLUG, CONNECTOR 3P			
CN307	*1-564-339-00	PIN, CONNECTOR 5P			
CN308	*1-564-337-00	PIN, CONNECTOR 3P			
CN309	*1-564-506-11	PLUG, CONNECTOR 3P			
CN310	*1-564-338-00	PIN, CONNECTOR 4P			
CN501	*1-564-507-11	PLUG, CONNECTOR 4P			
CN502	*1-564-508-11	PLUG, CONNECTOR 5P			
CN601	*1-564-508-11	PLUG, CONNECTOR 5P			
CN602	*1-564-509-11	PLUG, CONNECTOR 6P			
CN603	*1-564-509-11	PLUG, CONNECTOR 6P			
CN604	*1-564-510-11	PLUG, CONNECTOR 7P			
CN605	*1-564-506-11	PLUG, CONNECTOR 3P			

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

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FH-110WX/110W/100W TC-157W/157WX

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CT301	1-141-225-00	CAP, TUNING, TRIMMER
D101	8-719-911-19	DIODE 1SS119
D201	8-719-911-19	DIODE 1SS119
D301	8-719-911-19	DIODE 1SS119
D302	8-719-911-19	DIODE 1SS119
D303	8-719-911-19	DIODE 1SS119
D304	8-719-911-19	DIODE 1SS119
D305	8-719-911-19	DIODE 1SS119
D306	8-719-911-19	DIODE 1SS119
D307	8-719-911-19	DIODE 1SS119
D308	8-719-911-19	DIODE 1SS119
D309	8-719-933-54	DIODE HZS9A2L
D401	8-719-911-19	DIODE 1SS119
D501	8-719-200-77	DIODE 10E2N
D502	8-719-200-77	DIODE 10E2N
D503	8-719-911-19	DIODE 1SS119
D504	8-719-911-19	DIODE 1SS119
D507	8-719-933-57	DIODE HZS9B2L
D508	8-719-933-39	DIODE HZS6C1L
D509	8-719-911-19	DIODE 1SS119
D510	8-719-911-19	DIODE 1SS119
D511	8-719-911-19	DIODE 1SS119
D512	8-719-911-19	DIODE 1SS119
D513	8-719-911-19	DIODE 1SS119
D514	8-719-911-19	DIODE 1SS119
D515	8-719-911-19	DIODE 1SS119
D516	8-719-911-19	DIODE 1SS119
D517	8-719-911-19	DIODE 1SS119
D519	8-719-911-19	DIODE 1SS119
D520	8-719-911-19	DIODE 1SS119
D521	8-719-911-19	DIODE 1SS119
D522	8-719-200-77	DIODE 10E2N
D523	8-719-911-19	DIODE 1SS119
D524	8-719-911-19	DIODE 1SS119
D525	8-719-911-19	DIODE 1SS119
D601	8-719-911-19	DIODE 1SS119
D602	8-719-911-19	DIODE 1SS119
D603	8-719-812-41	DIODE TLR124
D604	8-719-812-41	DIODE TLR124
D605	8-719-911-19	DIODE 1SS119
D606	8-719-911-19	DIODE 1SS119
D607	8-719-911-19	DIODE 1SS119
D608	8-719-911-19	DIODE 1SS119
D609	8-719-911-19	DIODE 1SS119
D610	8-719-918-67	DIODE GL-1EG102
D611	8-719-918-67	DIODE GL-1EG102
D612	8-719-918-67	DIODE GL-1EG102
D613	8-719-918-67	DIODE GL-1EG102
D614	8-719-918-65	DIODE GL-1PR102
D615	8-719-918-67	DIODE GL-1EG102
D616	8-719-918-67	DIODE GL-1EG102
D617	8-719-918-66	DIODE GL-1HY102
D618	8-719-918-67	DIODE GL-1EG102
D619	8-719-911-19	DIODE 1SS119
D620	8-719-911-19	DIODE 1SS119

F501 1-532-259-00 (TC-157W:E2/3,TC-157WX:AEP)
...FUSE, TIME-LAG
F501 1-532-742-11 (TC-157WX:US,Canadian)
...FUSE, GLASS TUBE

ELECTRICAL PARTS

Ref.No.	Part No.	Description
F502	1-532-259-00	(TC-157W:E2/3,TC-157WX:AEP) ...FUSE, TIME-LAG
F502	1-532-742-11	(TC-157WX:US,Canadian) ...FUSE, GLASS TUBE
HE901	X-3391-127-1	HEAD ASSY, ROTARY
HP901	X-3391-102-1	HEAD ASSY, ROTARY
HRP901	X-3391-127-1	HEAD ASSY, ROTARY
IC301	8-759-800-92	IC LA3220
IC302	8-752-018-70	IC CX20187
IC303	8-759-600-02	IC M5218L
IC304	8-759-800-36	IC LA3160
IC305	8-759-800-36	IC LA3160
IC306	8-759-600-02	IC M5218L
IC307	8-759-984-66	IC MB84066B
IC308	8-759-984-66	IC MB84066B
IC309	8-759-984-66	IC MB84066B
IC401	8-759-700-46	IC CX10034
IC402	8-759-984-69	IC MB84069UB
IC501	8-759-603-20	IC M50742-404SP
IC502	8-759-984-69	IC MB84069UB
L101	1-408-923-00	MICRO INDUCTOR 8.2MMH
L102	1-408-918-11	MICRO INDUCTOR 3.3MMH
L103	1-408-930-00	MICRO INDUCTOR 33MMH
L201	1-408-923-00	MICRO INDUCTOR 8.2MMH
L202	1-408-918-11	MICRO INDUCTOR 3.3MMH
L203	1-408-930-00	MICRO INDUCTOR 33MMH
L301	1-408-080-00	MICRO INDUCTOR 100UH
L501	1-408-088-00	MICRO INDUCTOR 220UH
L502	1-408-571-00	MICRO INDUCTOR 47UH
LPF101	1-235-827-11	FILTER, LOW PASS
LPF201	1-235-827-11	FILTER, LOW PASS
M901	X-3391-117-1	MOTOR ASSY, CAPSTAN
M902	X-3391-118-1	MOTOR ASSY, REEL
M903	X-3391-117-1	MOTOR ASSY, CAPSTAN
M904	X-3391-118-1	MOTOR ASSY, REEL
PM501	1-454-428-11	SOLENOID, PLUNGER
PM502	1-454-428-11	SOLENOID, PLUNGER
Q101	8-729-606-33	TRANSISTOR 2SC2603F
Q102	8-729-606-33	TRANSISTOR 2SC2603F
Q103	8-729-900-74	TRANSISTOR DTC143TS
Q104	8-729-900-74	TRANSISTOR DTC143TS
Q105	8-729-900-74	TRANSISTOR DTC143TS
Q107	8-729-900-74	TRANSISTOR DTC143TS
Q108	8-729-900-74	TRANSISTOR DTC143TS
Q109	8-729-900-74	TRANSISTOR DTC143TS
Q110	8-729-900-74	TRANSISTOR DTC143TS
Q111	8-729-900-74	TRANSISTOR DTC143TS
Q201	8-729-606-33	TRANSISTOR 2SC2603F
Q202	8-729-606-33	TRANSISTOR 2SC2603F
Q203	8-729-900-74	TRANSISTOR DTC143TS
Q204	8-729-900-74	TRANSISTOR DTC143TS
Q205	8-729-900-74	TRANSISTOR DTC143TS
Q207	8-729-900-74	TRANSISTOR DTC143TS
Q208	8-729-900-74	TRANSISTOR DTC143TS
Q209	8-729-900-74	TRANSISTOR DTC143TS
Q210	8-729-900-74	TRANSISTOR DTC143TS
Q211	8-729-900-74	TRANSISTOR DTC143TS
Q301	8-729-900-74	TRANSISTOR DTC143TS

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

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FH-110WX/110W/100W TC-157W/157WX

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q302	8-729-606-33	TRANSISTOR 2SC2603F
Q303	8-729-900-65	TRANSISTOR DTA144ES
Q304	8-729-801-93	TRANSISTOR 2SD1387
Q305	8-729-606-33	TRANSISTOR 2SC2603F
Q306	8-729-606-33	TRANSISTOR 2SC2603F
Q307	8-729-173-13	TRANSISTOR 2SB731
Q308	8-729-606-33	TRANSISTOR 2SC2603F
Q309	8-729-606-33	TRANSISTOR 2SC2603F
Q310	8-729-606-33	TRANSISTOR 2SC2603F
Q401	8-729-900-89	TRANSISTOR DTC144ES
Q402	8-729-900-89	TRANSISTOR DTC144ES
Q403	8-729-900-65	TRANSISTOR DTA144ES
Q404	8-729-900-65	TRANSISTOR DTA144ES
Q405	8-729-900-65	TRANSISTOR DTA144ES
Q406	8-729-900-65	TRANSISTOR DTA144ES
Q407	8-729-900-65	TRANSISTOR DTA144ES
Q501	8-729-606-33	TRANSISTOR 2SC2603F
Q503	8-729-111-67	TRANSISTOR 2SB1094-L
Q504	8-729-802-34	TRANSISTOR 2SD1388
Q505	8-729-606-33	TRANSISTOR 2SC2603F
Q507	8-729-180-93	TRANSISTOR 2SD809
Q508	8-729-900-65	TRANSISTOR DTA144ES
Q509	8-729-606-33	TRANSISTOR 2SC2603F
Q510	8-729-606-33	TRANSISTOR 2SC2603F
Q511	8-729-900-89	TRANSISTOR DTC144ES
Q512	8-729-900-89	TRANSISTOR DTC144ES
Q513	8-729-900-89	TRANSISTOR DTC144ES
Q514	8-729-900-61	TRANSISTOR DTA114ES
Q515	8-729-900-61	TRANSISTOR DTA114ES
Q516	8-729-900-61	TRANSISTOR DTA114ES
Q517	8-729-900-61	TRANSISTOR DTA114ES
Q518	8-729-801-93	TRANSISTOR 2SD1387
Q519	8-729-900-74	TRANSISTOR DTC143TS
Q520	8-729-900-80	TRANSISTOR DTC114ES
Q521	8-729-900-80	TRANSISTOR DTC114ES
Q522	8-729-900-61	TRANSISTOR DTA114ES
Q523	8-729-801-93	TRANSISTOR 2SD1387
Q524	8-729-900-61	TRANSISTOR DTA114ES
Q525	8-729-801-93	TRANSISTOR 2SD1387
Q526	8-729-900-65	TRANSISTOR DTA144ES
Q527	8-729-900-65	TRANSISTOR DTA144ES
Q528	8-729-900-80	TRANSISTOR DTC114ES
Q529	8-729-802-22	TRANSISTOR 2SB1014
Q530	8-729-802-34	TRANSISTOR 2SD1388
Q531	8-729-801-83	TRANSISTOR 2SB1013
Q532	8-729-801-83	TRANSISTOR 2SB1013
Q533	8-729-801-93	TRANSISTOR 2SD1387
Q534	8-729-801-93	TRANSISTOR 2SD1387
Q535	8-729-801-83	TRANSISTOR 2SB1013
Q536	8-729-801-83	TRANSISTOR 2SB1013
Q537	8-729-801-83	TRANSISTOR 2SB1013
Q538	8-729-801-93	TRANSISTOR 2SD1387
Q539	8-729-801-93	TRANSISTOR 2SD1387
Q540	8-729-801-83	TRANSISTOR 2SB1013
Q541	8-729-802-34	TRANSISTOR 2SD1388
Q542	8-729-900-89	TRANSISTOR DTC144ES
Q543	8-729-900-65	TRANSISTOR DTA144ES

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q544	8-729-900-65	TRANSISTOR DTA144ES
Q545	8-729-900-74	TRANSISTOR DTC143TS
Q546	8-729-606-33	TRANSISTOR 2SC2603F
Q547	8-729-606-33	TRANSISTOR 2SC2603F
Q548	8-729-900-89	TRANSISTOR DTC144ES
Q549	8-729-900-74	TRANSISTOR DTC143TS
Q550	8-729-900-74	TRANSISTOR DTC143TS
Q551	8-729-900-74	TRANSISTOR DTC143TS
Q901	1-807-509-11	PHOTO SENSOR
Q902	1-807-509-11	PHOTO SENSOR
R101	1-249-437-11	CARBON 47K 5% 1/6W
R102	1-249-419-11	CARBON 1.5K 5% 1/6W
R103	1-249-433-11	CARBON 22K 5% 1/6W
R104	1-247-815-00	CARBON 220 5% 1/6W
R105	1-249-415-11	CARBON 680 5% 1/6W
R106	1-249-419-11	CARBON 1.5K 5% 1/6W
R107	1-249-417-11	CARBON 1K 5% 1/6W
R108	1-249-417-11	CARBON 1K 5% 1/6W
R109	1-249-417-11	CARBON 1K 5% 1/6W
R110	1-247-846-00	CARBON 4.3K 5% 1/6W
R111	1-249-422-11	CARBON 2.7K 5% 1/6W
R112	1-247-822-00	CARBON 430 5% 1/6W
R113	1-247-851-00	CARBON 6.8K 5% 1/6W
R114	1-249-429-11	CARBON 10K 5% 1/6W
R115	1-247-839-00	CARBON 2.2K 5% 1/6W
R116	1-249-429-11	CARBON 10K 5% 1/6W
R117	1-247-839-00	CARBON 2.2K 5% 1/6W
R118	1-249-441-11	CARBON 100K 5% 1/6W
R119	1-247-887-00	CARBON 220K 5% 1/6W
R121	1-249-441-11	CARBON 100K 5% 1/6W
R122	1-249-420-11	CARBON 1.8K 5% 1/6W
R123	1-247-813-00	CARBON 180 5% 1/6W
R124	1-247-851-00	CARBON 6.8K 5% 1/6W
R125	1-249-423-11	CARBON 3.3K 5% 1/6W
R126	1-249-422-11	CARBON 2.7K 5% 1/6W
R127	1-249-417-11	CARBON 1K 5% 1/6W
R128	1-249-420-11	CARBON 1.8K 5% 1/6W
R129	1-247-813-00	CARBON 180 5% 1/6W
R130	1-247-849-00	CARBON 5.6K 5% 1/6W
R131	1-249-423-11	CARBON 3.3K 5% 1/6W
R132	1-249-422-11	CARBON 2.7K 5% 1/6W
R133	1-249-422-11	CARBON 2.7K 5% 1/6W
R134	1-249-429-11	CARBON 10K 5% 1/6W
R135	1-247-893-00	CARBON 390K 5% 1/6W
R136	1-247-883-00	CARBON 150K 5% 1/6W
R137	1-247-848-00	CARBON 5.1K 5% 1/6W
R138	1-249-405-11	CARBON 100 5% 1/6W
R139	1-247-839-00	CARBON 2.2K 5% 1/6W
R140	1-247-842-00	CARBON 3K 5% 1/6W
R141	1-247-887-00	CARBON 220K 5% 1/6W
R142	1-247-830-00	CARBON 910 5% 1/6W
R143	1-247-887-00	CARBON 220K 5% 1/6W
R144	1-247-875-00	CARBON 68K 5% 1/6W
R145	1-247-883-00	CARBON 150K 5% 1/6W
R146	1-247-848-00	CARBON 5.1K 5% 1/6W
R147	1-249-405-11	CARBON 100 5% 1/6W
R148	1-247-839-00	CARBON 2.2K 5% 1/6W
R149	1-247-842-00	CARBON 3K 5% 1/6W

FH-110WX/110W/100W

TC-157W/157WX

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R150	1-247-887-00	CARBON	220K	5%	1/6W
R151	1-249-441-11	CARBON	100K	5%	1/6W
R152	1-249-441-11	CARBON	100K	5%	1/6W
R153	1-249-419-11	CARBON	1.5K	5%	1/6W
R154	1-249-417-11	CARBON	1K	5%	1/6W
R155	1-249-417-11	CARBON	1K	5%	1/6W
R156	1-249-441-11	CARBON	100K	5%	1/6W
R157	1-249-437-11	CARBON	47K	5%	1/6W
R158	1-249-419-11	CARBON	1.5K	5%	1/6W
R159	1-249-441-11	CARBON	100K	5%	1/6W
R161	1-247-839-00	CARBON	2.2K	5%	1/6W
R162	1-249-417-11	CARBON	1K	5%	1/6W
R163	1-249-423-11	CARBON	3.3K	5%	1/6W
R164	1-249-435-11	CARBON	33K	5%	1/6W
R165	1-249-435-11	CARBON	33K	5%	1/6W
R166	1-249-432-11	CARBON	18K	5%	1/6W
R168	1-249-415-11	CARBON	680	5%	1/6W
R169	1-249-423-11	CARBON	3.3K	5%	1/6W
R170	1-247-851-00	CARBON	6.8K	5%	1/6W
R201	1-249-437-11	CARBON	47K	5%	1/6W
R202	1-249-419-11	CARBON	1.5K	5%	1/6W
R203	1-249-433-11	CARBON	22K	5%	1/6W
R204	1-247-815-00	CARBON	220	5%	1/6W
R205	1-249-415-11	CARBON	680	5%	1/6W
R206	1-249-419-11	CARBON	1.5K	5%	1/6W
R207	1-249-417-11	CARBON	1K	5%	1/6W
R208	1-249-417-11	CARBON	1K	5%	1/6W
R209	1-249-417-11	CARBON	1K	5%	1/6W
R210	1-247-846-00	CARBON	4.3K	5%	1/6W
R211	1-249-422-11	CARBON	2.7K	5%	1/6W
R212	1-247-822-00	CARBON	430	5%	1/6W
R213	1-247-851-00	CARBON	6.8K	5%	1/6W
R214	1-249-429-11	CARBON	10K	5%	1/6W
R215	1-247-839-00	CARBON	2.2K	5%	1/6W
R216	1-249-429-11	CARBON	10K	5%	1/6W
R217	1-247-839-00	CARBON	2.2K	5%	1/6W
R218	1-249-441-11	CARBON	100K	5%	1/6W
R219	1-247-887-00	CARBON	220K	5%	1/6W
R221	1-249-441-11	CARBON	100K	5%	1/6W
R222	1-249-420-11	CARBON	1.8K	5%	1/6W
R223	1-247-813-00	CARBON	180	5%	1/6W
R224	1-247-851-00	CARBON	6.8K	5%	1/6W
R225	1-249-423-11	CARBON	3.3K	5%	1/6W
R226	1-249-422-11	CARBON	2.7K	5%	1/6W
R227	1-249-417-11	CARBON	1K	5%	1/6W
R228	1-249-420-11	CARBON	1.8K	5%	1/6W
R229	1-247-813-00	CARBON	180	5%	1/6W
R230	1-247-849-00	CARBON	5.6K	5%	1/6W
R231	1-249-423-11	CARBON	3.3K	5%	1/6W
R232	1-249-422-11	CARBON	2.7K	5%	1/6W
R233	1-249-422-11	CARBON	2.7K	5%	1/6W
R234	1-249-429-11	CARBON	10K	5%	1/6W
R235	1-247-893-00	CARBON	390K	5%	1/6W
R236	1-247-883-00	CARBON	150K	5%	1/6W
R237	1-247-848-00	CARBON	5.1K	5%	1/6W
R238	1-249-405-11	CARBON	100	5%	1/6W
R239	1-247-839-00	CARBON	2.2K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R240	1-247-842-00	CARBON	3K	5%	1/6W
R241	1-247-887-00	CARBON	220K	5%	1/6W
R242	1-247-830-00	CARBON	910	5%	1/6W
R243	1-247-887-00	CARBON	220K	5%	1/6W
R244	1-247-875-00	CARBON	68K	5%	1/6W
R245	1-247-883-00	CARBON	150K	5%	1/6W
R246	1-247-848-00	CARBON	5.1K	5%	1/6W
R247	1-249-405-11	CARBON	100	5%	1/6W
R248	1-247-839-00	CARBON	2.2K	5%	1/6W
R249	1-247-842-00	CARBON	3K	5%	1/6W
R250	1-247-887-00	CARBON	220K	5%	1/6W
R251	1-249-441-11	CARBON	100K	5%	1/6W
R252	1-249-441-11	CARBON	100K	5%	1/6W
R253	1-249-419-11	CARBON	1.5K	5%	1/6W
R254	1-249-417-11	CARBON	1K	5%	1/6W
R255	1-249-417-11	CARBON	1K	5%	1/6W
R256	1-249-441-11	CARBON	100K	5%	1/6W
R257	1-249-437-11	CARBON	47K	5%	1/6W
R258	1-249-419-11	CARBON	1.5K	5%	1/6W
R259	1-249-441-11	CARBON	100K	5%	1/6W
R261	1-247-839-00	CARBON	2.2K	5%	1/6W
R262	1-249-417-11	CARBON	1K	5%	1/6W
R263	1-249-423-11	CARBON	3.3K	5%	1/6W
R264	1-249-435-11	CARBON	33K	5%	1/6W
R265	1-249-435-11	CARBON	33K	5%	1/6W
R266	1-249-432-11	CARBON	18K	5%	1/6W
R268	1-249-415-11	CARBON	680	5%	1/6W
R269	1-249-423-11	CARBON	3.3K	5%	1/6W
R270	1-247-851-00	CARBON	6.8K	5%	1/6W
R301	1-247-704-11	CARBON	220	5%	1/4W
R302	1-247-903-00	CARBON	1M	5%	1/6W
R303	1-249-405-11	CARBON	100	5%	1/6W
R304	1-247-887-00	CARBON	220K	5%	1/6W
R305	1-214-777-00	METAL	100K	1%	1/4W
R306	1-249-429-11	CARBON	10K	5%	1/6W
R308	1-247-819-00	CARBON	330	5%	1/6W
R309	1-249-437-11	CARBON	47K	5%	1/6W
R310	1-249-437-11	CARBON	47K	5%	1/6W
R311	1-249-423-11	CARBON	3.3K	5%	1/6W
R312	1-249-441-11	CARBON	100K	5%	1/6W
R313	1-247-704-11	CARBON	220	5%	1/4W
R314	1-247-704-11	CARBON	220	5%	1/4W
R315	1-249-425-11	CARBON	4.7K	5%	1/6W
R316	1-247-859-00	CARBON	15K	5%	1/6W
R317	1-249-425-11	CARBON	4.7K	5%	1/6W
R318	1-247-849-00	CARBON	5.6K	5%	1/6W
R319	1-247-842-00	CARBON	3K	5%	1/6W
R320	1-247-811-00	CARBON	150	5%	1/6W
R321	1-249-429-11	CARBON	10K	5%	1/6W
R322	1-249-434-11	CARBON	27K	5%	1/6W
R323	1-247-857-00	CARBON	12K	5%	1/6W
R324	1-247-853-00	CARBON	8.2K	5%	1/6W
R325	1-247-853-00	CARBON	8.2K	5%	1/6W
R326	1-247-080-00	CARBON	5.6	5%	1/4W F
R327	1-247-839-00	CARBON	2.2K	5%	1/6W
R328	1-247-839-00	CARBON	2.2K	5%	1/6W
R329	1-247-839-00	CARBON	2.2K	5%	1/6W

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

FH-110WX/110W/100W TC-157W/157WX

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R330	1-249-417-11	CARBON	1K	5%	1/6W
R331	1-249-437-11	CARBON	47K	5%	1/6W
R332	1-249-435-11	CARBON	33K	5%	1/6W
R333	1-247-859-00	CARBON	15K	5%	1/6W
R334	1-247-839-00	CARBON	2.2K	5%	1/6W
R335	1-249-429-11	CARBON	10K	5%	1/6W
R401	1-249-437-11	CARBON	47K	5%	1/6W
R402	1-247-857-00	CARBON	12K	5%	1/6W
R403	1-247-846-00	CARBON	4.3K	5%	1/6W
R404	1-247-858-00	CARBON	13K	5%	1/6W
R405	1-249-425-11	CARBON	4.7K	5%	1/6W
R406	1-247-857-00	CARBON	12K	5%	1/6W
R407	1-249-429-11	CARBON	10K	5%	1/6W
R408	1-249-432-11	CARBON	18K	5%	1/6W
R409	1-247-833-00	CARBON	1.2K	5%	1/6W
R410	1-249-437-11	CARBON	47K	5%	1/6W
R411	1-247-881-00	CARBON	120K	5%	1/6W
R412	1-249-441-11	CARBON	100K	5%	1/6W
R413	1-249-423-11	CARBON	3.3K	5%	1/6W
R414	1-249-441-11	CARBON	100K	5%	1/6W
R415	1-247-887-00	CARBON	220K	5%	1/6W
R416	1-249-429-11	CARBON	10K	5%	1/6W
R501	1-247-859-00	CARBON	15K	5%	1/6W
R503	1-247-226-00	CARBON	270	5%	1/2W
R504	1-247-226-00	CARBON	270	5%	1/2W
R505	1-249-441-11	CARBON	100K	5%	1/6W
R506	1-249-425-11	CARBON	4.7K	5%	1/6W
R508	1-249-420-11	CARBON	1.8K	5%	1/6W
R509	1-247-839-00	CARBON	2.2K	5%	1/6W
R510	1-249-417-11	CARBON	1K	5%	1/6W
R511	1-247-823-00	CARBON	470	5%	1/6W
R512	1-249-425-11	CARBON	4.7K	5%	1/6W
R513	1-249-425-11	CARBON	4.7K	5%	1/6W
R514	1-249-425-11	CARBON	4.7K	5%	1/6W
R515	1-249-425-11	CARBON	4.7K	5%	1/6W
R516	1-249-425-11	CARBON	4.7K	5%	1/6W
R517	1-249-425-11	CARBON	4.7K	5%	1/6W
R518	1-249-425-11	CARBON	4.7K	5%	1/6W
R519	1-249-425-11	CARBON	4.7K	5%	1/6W
R520	1-249-437-11	CARBON	47K	5%	1/6W
R521	1-249-437-11	CARBON	47K	5%	1/6W
R522	1-249-417-11	CARBON	1K	5%	1/6W
R523	1-249-417-11	CARBON	1K	5%	1/6W
R524	1-249-417-11	CARBON	1K	5%	1/6W
R525	1-249-417-11	CARBON	1K	5%	1/6W
R526	1-247-815-00	CARBON	220	5%	1/6W
R527	1-249-434-11	CARBON	27K	5%	1/6W
R528	1-249-441-11	CARBON	100K	5%	1/6W
R529	1-249-429-11	CARBON	10K	5%	1/6W
R530	1-247-815-00	CARBON	220	5%	1/6W
R531	1-249-434-11	CARBON	27K	5%	1/6W
R532	1-249-441-11	CARBON	100K	5%	1/6W
R533	1-249-429-11	CARBON	10K	5%	1/6W
R534	1-249-429-11	CARBON	10K	5%	1/6W
R535	1-247-833-00	CARBON	1.2K	5%	1/6W
R536	1-249-429-11	CARBON	10K	5%	1/6W
R537	1-249-429-11	CARBON	10K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R538	1-247-833-00	CARBON	1.2K	5%	1/6W
R539	1-249-429-11	CARBON	10K	5%	1/6W
R540	1-249-429-11	CARBON	10K	5%	1/6W
R541	1-249-434-11	CARBON	27K	5%	1/6W
R542	1-249-434-11	CARBON	27K	5%	1/6W
R543	1-249-434-11	CARBON	27K	5%	1/6W
R544	1-249-434-11	CARBON	27K	5%	1/6W
R545	1-249-429-11	CARBON	10K	5%	1/6W
R546	1-247-783-00	CARBON	10	5%	1/6W
R547	1-247-783-00	CARBON	10	5%	1/6W
R548	1-247-783-00	CARBON	10	5%	1/6W
R549	1-247-783-00	CARBON	10	5%	1/6W
R550	1-249-441-11	CARBON	100K	5%	1/6W
R551	1-249-441-11	CARBON	100K	5%	1/6W
R552	1-249-441-11	CARBON	100K	5%	1/6W
R553	1-249-441-11	CARBON	100K	5%	1/6W
R554	1-247-833-00	CARBON	1.2K	5%	1/6W
R555	1-247-833-00	CARBON	1.2K	5%	1/6W
R556	1-249-417-11	CARBON	1K	5%	1/6W
R557	1-249-417-11	CARBON	1K	5%	1/6W
R558	1-249-417-11	CARBON	1K	5%	1/6W
R559	1-249-417-11	CARBON	1K	5%	1/6W
R560	1-247-829-00	CARBON	820	5%	1/6W
R561	1-247-823-00	CARBON	470	5%	1/6W
R562	1-249-417-11	CARBON	1K	5%	1/6W
R563	1-249-417-11	CARBON	1K	5%	1/6W
R564	1-249-417-11	CARBON	1K	5%	1/6W
R565	1-249-417-11	CARBON	1K	5%	1/6W
R566	1-247-829-00	CARBON	820	5%	1/6W
R567	1-247-823-00	CARBON	470	5%	1/6W
R568	1-247-833-00	CARBON	1.2K	5%	1/6W
R569	1-249-441-11	CARBON	100K	5%	1/6W
R570	1-249-441-11	CARBON	100K	5%	1/6W
R571	1-249-441-11	CARBON	100K	5%	1/6W
R572	1-249-441-11	CARBON	100K	5%	1/6W
R573	1-247-903-00	CARBON	1M	5%	1/6W
R574	1-247-823-00	CARBON	470	5%	1/6W
R575	1-249-429-11	CARBON	10K	5%	1/6W
R576	1-249-429-11	CARBON	10K	5%	1/6W
R577	1-249-441-11	CARBON	100K	5%	1/6W
R578	1-249-441-11	CARBON	100K	5%	1/6W
R579	1-247-851-00	CARBON	6.8K	5%	1/6W
R580	1-247-889-00	CARBON	270K	5%	1/6W
R581	1-249-415-11	CARBON	680	5%	1/6W
R582	1-247-808-00	CARBON	110	5%	1/6W
R583	1-247-808-00	CARBON	110	5%	1/6W
R584	1-249-423-11	CARBON	3.3K	5%	1/6W
R585	1-249-429-11	CARBON	10K	5%	1/6W
R588	1-249-441-11	CARBON	100K	5%	1/6W
R589	1-249-429-11	CARBON	10K	5%	1/6W
R590	1-247-889-00	CARBON	270K	5%	1/6W
R591	1-247-889-00	CARBON	270K	5%	1/6W
R592	1-247-842-00	CARBON	3K	5%	1/6W
R593	1-247-842-00	CARBON	3K	5%	1/6W
R594	1-247-849-00	CARBON	5.6K	5%	1/6W
R595	1-247-859-00	CARBON	15K	5%	1/6W
R597	1-249-405-11	CARBON	100	5%	1/6W

FH-110WX/110W/100W

TC-157W/157WX

ELECTRICAL PARTS

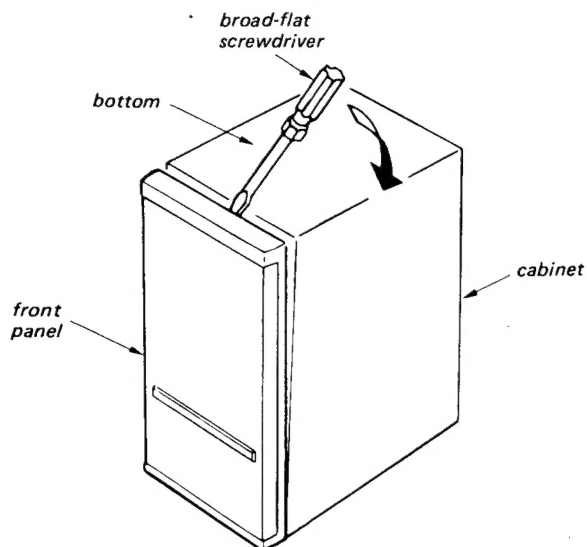
Ref.No.	Part No.	Description
R598	1-249-405-11	CARBON 100 5% 1/6W
R601	1-247-803-00	CARBON 68 5% 1/6W
R602	1-247-803-00	CARBON 68 5% 1/6W
R603	1-247-803-00	CARBON 68 5% 1/6W
R604	1-247-805-00	CARBON 82 5% 1/6W
R605	1-247-801-00	CARBON 56 5% 1/6W
R606	1-247-803-00	CARBON 68 5% 1/6W
R607	1-247-803-00	CARBON 68 5% 1/6W
R608	1-247-801-00	CARBON 56 5% 1/6W
RV101	1-230-631-11	RES, ADJ, CARBON 22K
RV102	1-230-631-11	RES, ADJ, CARBON 22K
RV103	1-230-630-11	RES, ADJ, CARBON 10K
RV201	1-230-631-11	RES, ADJ, CARBON 22K
RV202	1-230-631-11	RES, ADJ, CARBON 22K
RV203	1-230-630-11	RES, ADJ, CARBON 10K
RV501	1-230-721-11	RES, ADJ, CARBON 10K
RV502	1-230-720-11	RES, ADJ, CARBON 4.7K
RV503	1-230-721-11	RES, ADJ, CARBON 10K
RV504	1-230-720-11	RES, ADJ, CARBON 4.7K
RY301	1-515-535-11	RELAY
S1	1-570-720-11	SWITCH, PUSH (1 KEY)
S2	1-570-720-11	SWITCH, PUSH (1 KEY)
S3	1-570-720-11	SWITCH, PUSH (1 KEY)
S4	1-570-720-11	SWITCH, PUSH (1 KEY)
S5	1-570-720-11	SWITCH, PUSH (1 KEY)
S6	1-570-720-11	SWITCH, PUSH (1 KEY)
S7	1-570-723-11	SWITCH, PUSH (1 KEY)
S8	1-570-719-11	SWITCH, LEAF
S9	1-570-721-11	SWITCH, LEAF
S10	1-570-719-11	SWITCH, LEAF
S11	1-570-721-11	SWITCH, LEAF
S301	1-554-277-00	SWITCH, SLIDE (ISS 1)
S302	1-554-168-00	SWITCH, SLIDE (DOLBY NR)
S501	1-554-168-00	SWITCH, SLIDE (TIMER)
S502	1-554-168-00	SWITCH, SLIDE (DIRECTION MODE)
S503	1-554-277-00	SWITCH, SLIDE (ISS 2)
S601	1-553-856-00	SWITCH, KEY BOARD (DUBBING NORMAL)
S602	1-553-856-00	SWITCH, KEY BOARD (DUBBING HIGH)

ELECTRICAL PARTS

Ref.No.	Part No.	Description
S603	1-553-856-00	SWITCH, KEY BOARD (REW/A)
S604	1-553-856-00	SWITCH, KEY BOARD (REV/A)
S605	1-553-856-00	SWITCH, KEY BOARD (STOP/A)
S606	1-553-856-00	SWITCH, KEY BOARD (PLAY/A)
S607	1-553-856-00	SWITCH, KEY BOARD (FF/A)
S608	1-553-856-00	SWITCH, KEY BOARD (AMS/A)
S609	1-553-856-00	SWITCH, KEY BOARD (REC MUTE/B)
S610	1-553-856-00	SWITCH, KEY BOARD (PAUSE/B)
S611	1-553-856-00	SWITCH, KEY BOARD (REC/B)
S612	1-553-856-00	SWITCH, KEY BOARD (FF/B)
S613	1-553-856-00	SWITCH, KEY BOARD (PLAY/B)
S614	1-553-856-00	SWITCH, KEY BOARD (STOP/B)
S615	1-553-856-00	SWITCH, KEY BOARD (REW/B)
S616	1-553-856-00	SWITCH, KEY BOARD (REV/B)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T301	1-433-314-11	TRANSFORMER, BIAS OSCILLATION
TP301	1-230-631-11	RES, ADJ, CARBON 22K
TP501	1-230-722-11	RES, ADJ, CARBON 22K
TP502	1-230-724-11	RES, ADJ, CARBON 100K

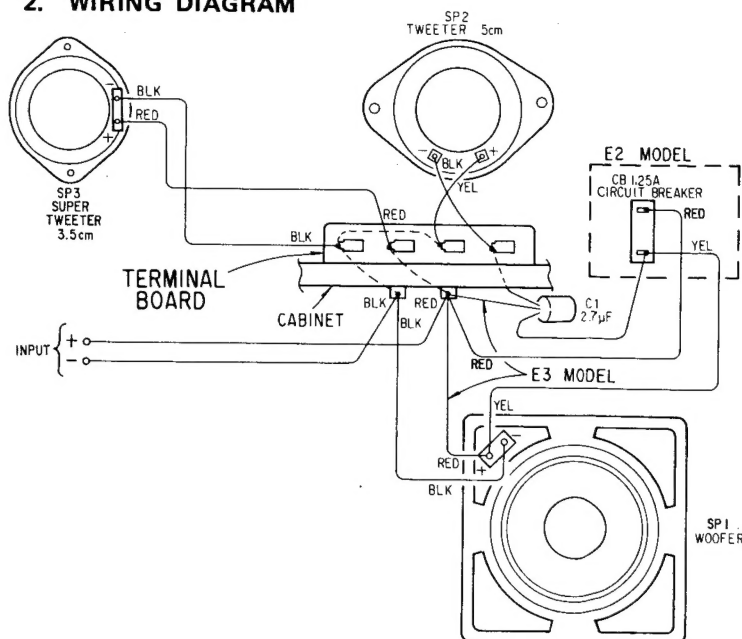
SPEAKER SYSTEM [APM-157D]

1. DISASSEMBLY FRONT PANEL REMOVAL

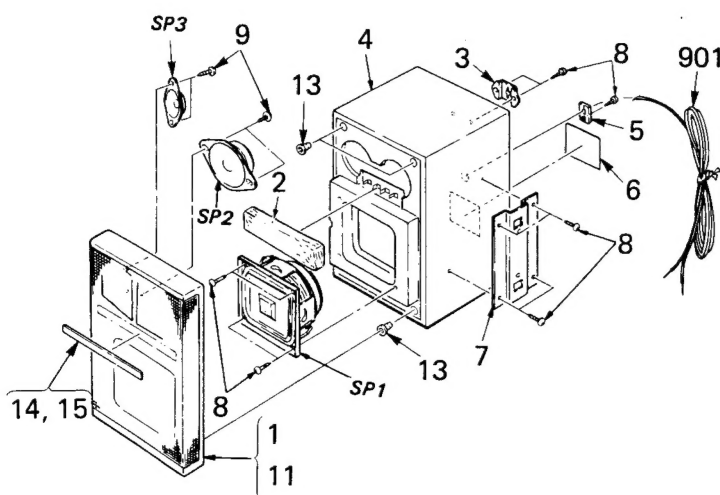


Note: Be careful not to scratch the cabinet.

2. WIRING DIAGRAM



3. EXPLODED VIEW AND PARTS LIST



Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

No.	Part No.	Description	Remarks
1	X-4910-067-1	PANEL (LEFT) ASSY, FRONT	
2	*4-910-045-01	ABSORBENT (C), ACOUSTIC	
3	*4-883-959-01	HOOK	
4	X-4910-070-1	(E2)...CABINET ASSY, SPEAKER	
	X-4910-075-1	(E3)...CABINET ASSY, SPEAKER	
5	*4-914-347-01	CLAMP	
6	*4-914-354-01	(E3)...LABEL, MODEL NUMBER	
	*4-914-355-01	(E2)...LABEL, MODEL NUMBER	
7	*4-902-981-11	PLATE (B), SIDE	
8	4-874-614-11	SCREW (4)(3.5X14), TAPPING	
9	7-685-646-71	SCREW +BVTP 3X8 TYPE2 SLIT	
11	X-4910-068-1	PANEL (RIGHT) ASSY, FRONT	
13	*4-872-922-02	CATCHER	
14	4-914-357-01	PLATE (LEFT), ORNAMENTAL	
15	4-914-356-01	PLATE (RIGHT), ORNAMENTAL	

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	1-558-547-11	CORD, SPEAKER CONNECTION
C1	1-123-545-00	ELECT 2.7MF 20% 50V
CB	1-532-664-00	(E2)...CIRCUIT BREAKER 1.25A
SP1	8-927-258-00	SPEAKER UNIT 090A006
SP2	1-503-590-11	SPEAKER (5CM CONE TYPE)
SP3	1-503-591-11	SPEAKER (3.5CM)